



1.3.1 Institution integrates cross cutting issues relevant to professional Ethics, Gender, Human Values, Environment and Sustainability in transacting the Curriculum.

INDEX

Sr. No.	Description	Page No
1	List of Courses	1
2	Sample copy of Scheme	3
3	Sample copy of Syllabus	4
4	List of Events organized by Institute	98
5	Sample Notice of the events	100
6	Sample copy of Activity Report	101
7	Sample copy of Attendance Report	103



List of Courses with topics of Professional Ethics, Gender, Human Values, Environment and Sustainability

Sr. No.	Program Name	Course code	Name of Course	Name of Topics
01	Electronics and telecommunication Engineering	BEETC-409A	Universal Human Value	Human Value
02	Computer Engineering	BECME310T	Environmental Science	Environmental and Sustainability
03	Civil Engineering	BTCVE508AU	Organizational Behaviour	Professional Ethics
04	Civil Engineering	BTCVE306T	Effective Technical Communication	Professional Ethics
05	Civil Engineering	BTCVE504T	Professional Practice, Law & Ethics	Professional Ethics
06	Mechanical Engineering	BEME405T	Professional Ethics	Professional Ethics
07	Computer Engineering	BECME505T	Industrial Economics and Entrepreneurship Development	Professional Ethics
08	Mechanical Engineering	BEME504T	Industrial Economics & Management	Professional Ethics
09	First Year	BSE2-8P	Indian Culture and Constitution	Human Values
10	First Year	BSE1-4T	Communication Skills	Professional Ethics
11	Civil Engineering	BTCVE403T	Environmental Engineering	Environmental and Sustainability
12	First Year	BSE1-3T	Energy and Environment	Environmental and Sustainability
13	Electronics and telecommunication Engineering	BEETC-308T	Consumer Affairs	Professional Ethics
14	Electronics and telecommunication Engineering	BEETC606T	Effective Technical Communication	Professional Ethics
15	Electronics and telecommunication Engineering	BEETC-5040T	Industrial Economics and Entrepreneurship	Professional Ethics
16	Civil Engineering	BECVE506P	Communicative English & Technical Writing	Professional Ethics
17	Mechanical Engineering	BEME606T	Functional English	Professional Ethics
18	Mechanical Engineering	BEME406T	Environmental Studies	Environmental and Sustainability



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Sarvasiddhanta Education Society's

SwaminarayanSiddhanta Institute of Technology

Affiliated to RashtrasantTukadojiMaharaj Nagpur University

Nagpur-KatolHighway Road, Khapri (Kothe),

Tal: Kalmeshwar, Nagpur, Maharastra-44150



19	Mechanical Engineering	BEME805T	Energy Conversion III	Environmental and Sustainability
20	Mechanical Engineering	BEME307P	Technical Report & Seminar	Professional Ethics
21	Computer Engineering	BECME306T	Universal Human Values	Human Value
22	Computer Engineering	BECME605T	Functional English	Professional Ethics
23	Computer Engineering	BTCME505T	Effective Technical Communication	Professional Ethics
24	Civil Engineering	BTCVE506T	Climate Change and its Mitigation	Environmental and Sustainability
25	Civil Engineering	BTCVE507P	Industrial Training & Professional Skill Training	Professional Ethics
26	Civil Engineering	BECVE605T	Environmental Engineering	Professional Ethics

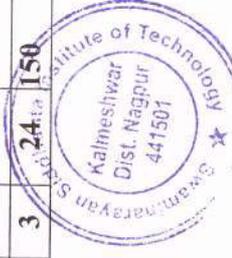



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**SCHEME OF EXAMINATION FOR
B.E. ELECTRONICS & TELECOMMUNICATION / ELECTRONICS & COMMUNICATION ENGINEERING/ ELECTRONICS
ENGINEERING
(SEMESTER – IV)**

Code	Subject	Teaching Scheme						Credit						MARKS				Total Marks
		L	Practical	Tutorial / Activity	Total	L	P	T/A	Total	Theory		Practical						
										Internal	University	Internal	Univ.					
BEETC-401T	Microcontrollers & Applications	3	-	1T	4	3	-	1	4	30	70	-	-	100				
BEETC-401P	Microcontrollers & Applications Lab	-	2	-	2	-	1	-	1	-	-	25	25	50				
BEETC-402T	Analog & Digital Communications	3	-	1T	4	3	-	1	4	30	70	-	-	100				
BEETC-403P	Analog and Digital Electronics Lab	-	2	-	2	-	1	-	1	-	-	25	25	50				
BEETC-404T	Analog System Design	3	-	1T	4	3	-	1	4	30	70	-	-	100				
BEETC-405T	Data structure & Algorithm	3	-	-	3	3	-	-	3	30	70	-	-	100				
BEETC-406T	HSC: Numerical Analysis with MATLAB	2	-	-	2	2	-	-	2	15	35	-	-	50				
BEETC-407T	Programming for problem solving	2	-	-	2	2	-	-	2	15	35	-	-	50				
BEETC-407P	Programming for problem solving Lab	-	4	-	4	-	2	-	2	-	-	25	25	50				
BEETC-408I	Internship								1			50	-	50				
BEETC-409A	Audit Course HSC: Universal human values	1			1									AUDIT				
Total		17	8	3T	28	16	4	3	24	150	350	125	75	700				

- L- Lecture , P-Practical, T- Tutorial , A- Activity
- Audit course marks are not counted in total marks



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Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur

Faculty of Engineering and Technology

B.E IVthsem (ETC/ECE/EN)

Subject: Universal Human Values (Theory)

CREDITS: 03

Teaching Scheme: 3 Hours/Week:

Examination Scheme: University Assessment: 70 Marks

College Assessment: 30 Marks

Aim: To inculcate sensitivity among students towards themselves and their surrounding including family, society and nature

Objective: The objective of the course is four fold:

1. Development of a holistic perspective based on self-exploration, about themselves (human being), family, society and nature/existence.
2. Understanding (or developing clarity) of the harmony in the human being, family, society and nature/existence
3. Strengthening of self-reflection.
4. Development of commitment and courage to act.

Course outcomes: By the end of the course,

1. Students are expected to become more aware of themselves, and their surroundings (family, society, nature)
2. Students would become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind.
3. Students would understand values in relationship.
4. Students would understand the role of a human being in ensuring harmony in society and nature.
5. Students would distinguish between ethical and unethical practices at work place and would contribute for making a value based society

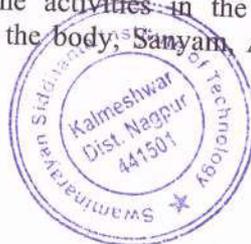
Unit 1

Value education, definition, need for value education. The content and the process of value education, basic guidelines for value education, self-exploration as a means of value education, happiness and prosperity as part of value education.

(6 hours)

Unit 2

Harmony of self with body, coexistence of self and body, understanding the needs of self and the needs of body, understanding the activities in the self and the activities in the body, Understanding Harmony of I with the body, Sanyam, Aspects of Sanyam, Types of Sanyam,



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benefits and obstacles in the path of Sanyam, Swasthya, Aspects of Swasthya, Determinants of Swasthya, Ways to maintain Swasthya.
(8 hours)

Unit 3

Values in relationship (nine universal values in relationships), Understanding values in human-human relationship; Meaning of Justice, Elements of Justice, Understanding meaning of Trust; Elements, Types and Dimensions of Trust, Difference between intention and competence.
(6 hours)

U.

The five dimensions of human endeavour, the holistic perception of harmony in existence, Understanding harmony in society: Resolution, Prosperity, fearlessness (trust) and co-existence as comprehensive Human Goals.
(8 hours)

Unit 5

Basics for ethical human conduct, definitiveness in ethical human conduct, human rights violations and social disparities, value based life, Competence in professional ethics
(8 hours)

Text Book: Human Values and Professional Ethics by R R Gaur, R Sangal, G P Bagaria, ExcelBooks, New Delhi, 2010

Reference Books

1. Jeevan Vidya: Ek Parichaya, A Nagaraj, Jeevan Vidya Prakashan, Amarkantak, 1999.
2. Human Values, A.N. Tripathi, New Age Intl. Publishers, New Delhi, 2004.
3. Indian Ethos and Modern Management: Amalgam of the best of the ideas from the East and the West, B.L. Bajpai, New Royal Book Bo., Lucknow, 2004
4. Human society in ethics and politics, Bertrand Russel, Routledge Publications, 2009



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Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur
B.E. Four Year Degree Course
(Revised Curriculum as per AICTE Model Curriculum)
Scheme & Syllabus for Computer Engineering

Third Semester:-

S N	Subject	Teaching Scheme			Evaluation Scheme			Credits	Category
		L	T	P	CA	UE	Total		
1	Mathematics – III	4	-	-	30	70	100	4	BSC
2	Digital Circuits and Fundamentals of Microprocessor	3	1	-	30	70	100	4	ESC
3	Object Oriented Programming	3	1	-	30	70	100	4	PCC-CS
4	Theory of Computation	3	-	-	30	70	100	3	PCC-CS
5	Introduction to Computer Networks	3	-	-	30	70	100	3	PCC-CS
6	Universal Human Values	2	-	-	15	35	50	2	HSMC
7	Digital Circuits and Fundamentals of Microprocessor Lab	-	-	2	25	25	50	1	ESC
8	Object Oriented Programming (Lab)	-	-	2	25	25	50	1	PCC- CS
9	Computer Workshop-I(Lab)	-	-	2	25	25	50	1	LC
10	Environmental Science	2	-	-	-	-	-	Audit	HSMC
Total		20	02	06	240	460	700	23	

L: Lectures T: Tutorials P: Practical

PCC-CS-Professional Core Courses PEC-CS-Professional Elective Courses

LC- Laboratory Course BSC- Basics Science Courses ESC-Engineering Science Courses

OEC-CS-Open Elective Courses MC- Mandatory Course

PROJ-CS- Project

HSMC- Humanities and Social Sciences including Management Courses

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Dr. S. V. Sonekar
Chairman



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RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR
FOUR YEAR BACHELOR OF ENGINEERING (B.E.) DEGREE COURSE
SEMESTER: 3rd (C.B.C.S.)
BRANCH: COMPUTER ENGINEERING

Subject : *Environmental Science (Audit Course)*

Subject Code : **BECME310T**

Load	Credits	College Assessment Marks	University Evaluation	Total Marks
2 Hrs (Theory)	Nil	Nil	Nil	Nil

Unit-I Air pollution and its control techniques:

[06 Hours]

Contaminant behavior in the environment, Air pollution due to SO_x, NO_x, photochemical smog, Indoor air pollution

Natural pathways for degradation: Carbon cycle, Sulphur cycle, Nitrogen cycle, Oxygen cycle.

Factors responsible for altering the composition of atmosphere (deforestation, burning of fossil fuels, industrial and vehicular emissions, CFCs).

Techniques to control Air pollution, ambient air quality and continuous air quality monitoring, Control measures at source, Kyoto Protocol, Carbon Credits.

Unit-II Water pollution and its control techniques:

[06 Hours]

Major sources of water pollution: Eutrophication, acid mine drains, pesticides and fertilizers, dyeing and tanning, marine pollution, micro plastics

Techniques to control water pollution: Conventional waste water treatment-types of sewage, sewerage system, alternative systems, primary, secondary and tertiary processes including aerobic and anaerobic techniques, safe disposal and its utility.

Treatment schemes for waste water from dairy, textile, power plants, pharmaceutical industries, and agro based industries such as rice mills

Unit-III Other Environmental Pollution & Waste Management:

[06 Hours]

Soil pollution: Soil around us, Soil water characteristics, soil pollution. Causes, effects &




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control: noise pollution, nuclear & radiation hazards, marine pollution (Oil spills & Ocean Acidification)

Solid waste management: Composting, vermiculture, landfills, hazardous waste treatment, bioremediation technologies, conventional techniques (land farming, constructed wetlands), and phytoremediation.

Degradation of xenobiotics in environment: Petroleum hydrocarbons, pesticides, heavy metals
Introduction, types of e-wastes, environmental impact, e-waste recycling, e-waste management rules.

Unit-IV Social Issues and the Environmental Laws

[06 Hours]

Concept of Sustainable development Water conservation, rain water harvesting, watershed management Resettlement and rehabilitation of people; its problems and concerns. Environmental Laws (brief idea only) Environment Protection Act, Air (Prevention and Control of Pollution) Act, Water (Prevention and control of Pollution) Act, Wildlife Protection Act, Forest Conservation Act Issues involved in enforcement of environmental legislation. Different government initiatives (brief idea only)- National ambient air quality standard 2009, Swachh Bharat Abhiyan, National afforestation program and Act- 2016, National River conservation plan and National Ganga River basin authority, Formation of National Green Tribunal

Activity

1. Field Trip & Report Writing
2. Case-study & Report Writing

Reference Books:

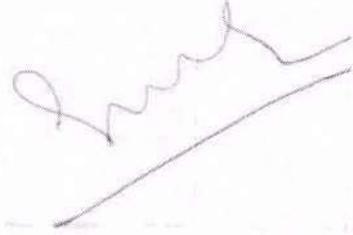
1. *Benny Joseph, Environmental Studies, Mc Graw Hill Education (India) Private Limited*
2. *B. K. Sharma, Environmental Chemistry, Goel Publishing House, Meerut*
3. *P Aarne Vesilind, J. Jeffrey Peirce and Ruth F. Weiner, Environmental Pollution and Control, Butterworth-Heinemann*
4. *D. D. Mishra, S. S. Dara, A Textbook of Environmental Chemistry and Pollution Control, S. Chand & Company Ltd.*
5. *Shree Nath Singh, Microbial Degradation of Xenobiotics, Springer-Verlag Berlin*




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Heidelberg

6. *Indian Environmental Law: Key Concepts and Principles* edited by Shibani Ghosh, Publisher, Orient BlackSwan, 2019. ISBN, 9352875796.
7. *P. Thangavel & Sridevi, Environmental Sustainability: Role of Green technologies*, Springer publications



Dr. S.V. Sonelkar
Chairman



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RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

FACULTY OF SCIENCE & TECHNOLOGY

B. TECH CIVIL ENGINEERING (CHOICE BASED CREDIT SYSTEM)

Sem: V	Total Hours Distribution per week		
Total Credit: 00	Lecture (L): 02 Hrs	Tutorial/Activity (T/A): 0 Hrs.	Practical (P): 0 Hrs.
Subject Code	BTCVE508AU	Name of Subject: Organizational Behaviour	
Examination Scheme			
Internal Marks:	University Marks:	Minimum Passing Marks:	Examination Duration:
50 Marks	AUDIT	--	--

Course Objective

1	The objective of the course is to create awareness among learners about the various essential aspects of organizational processes and structure and motivation in organization.
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Course Outcome

After completion of syllabus student able to

1	Understand the concept and importance of organizational behaviour.
2	Acquire the knowledge of interpersonal behaviour and transaction analysis
3	Know different traits and theories of personality
4	Analyze the importance of motivation in organization and types of leadership



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MAPPING OF CO WITH PO

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BECVE508AU1									3	2		1
BECVE508AU2									3	2		1
BECVE508AU3									3	2		1
BECVE508AU4									3	2		1

1 Low

2 Medium

3 High

SYLLABUS

Unit No.1: Introduction to organizational behaviour			
Details of Topic	Allotment of Hours		Mapped with CO Number
	L	T/A	CO
Concept of organization behavior	01		1
Importance of organization behaviour	02		1
Key elements of organization behaviour	01		1
Scope of organizational behaviour.	02		1
	06		
Unit No.2: Introduction to interpersonal behavior			
Details of Topic	Allotment of Hours		Mapped with CO Number
	L	T/A	CO
Nature and meaning of interpersonal behaviour	01		2
Concept of transaction analysis	02		2
Benefits and uses of transaction analysis	01		2
Johari window model.	02		2
Importance of organization behaviour	02		1
	06		
Unit No.3: Introduction to personality			
Details of Topic	Allotment of Hours		Mapped with CO Number
	L	T/A	CO
Definition and meaning of personality	02		3
Importance of personality	02		3
Theories of personality, personality traits.	02		3
	06		



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Unit No.4 : Introduction to Motivation and leadership			
Details of Topic	Allotment of Hours		Mapped with CO Number
	L	T/A	CO
Concept and importance of motivation	01		4
Maslow's two factor theory of motivation.	02		4
Significance of motivation in organization.	01		4
Types of leadership styles	02		4
	06		

References							
Applicable for Unit No.	Name of Book	Name of Author	Name of Publisher	Edition	Category		
					Text Book	Research paper	Reference book
I,II, III,IV	Organizational behaviour	MN Mishra					
	The human side of organization	Michale Drafke					
	Management and Organizational behaviour	Laurie.J. Mullins					
	Organizational behaviour	K. Aaswathappa					

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C. S. S. S.

Signature
(Dr. A.N. Dabhade)
BOS member

Signature
(Dr. Avinash N Shrikhande,
BOS (Govt Engg) chairman



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RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR
FACULTY OF SCIENCE & TECHNOLOGY
BE CIVIL ENGINEERING
(CHOICE BASED CREDIT SYSTEM)

Sem: III (3rd)	Total Hours Distribution per week		
Total Credit: 2	Lecture (L): 2Hrs	Tutorial/Activity (T/A): N.A	Practical (P): N.A
Subject Code	BECVE306T	EFFECTIVE TECHNICAL COMMUNICATION	
Examination Scheme			
Internal Marks:	University Marks:	Minimum Passing Marks:	Examination Duration:
15 Marks (07 marks for sessional Examination) (08 Marks for Activity based)	35 Marks	23 Marks	2 Hours

Course Objectives	
1	To enhance competency in English language among learners aspiring to be entrepreneurs/higher learning.

Course Outcomes	
After completion of syllabus, students would be able to	
1	To face competitive examinations (IELTES/ TOEFL/CAT/ MAT/ XAT/SNAP/GMAT/GATE etc.)
2	To pursue masters degree. They will also acquire language skills required to write their Reviews/Projects/Reports.
3.	To organize their thoughts in English and hence face job interviews more confidently.



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MAPPING OF CO WITH PO

CO/PO →	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12-
1												
2												
3												
4												
5												

1 Low

2 Medium

3 High




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FACULTY OF SCIENCE & TECHNOLOGY
BE CIVIL ENGINEERING
(CHOICE BASED CREDIT SYSTEM)

**BECVE306T- EFFECTIVE TECHNICAL
COMMUNICATION
SYLLABUS**

Details of Topic	Allotment of Hours		Mapped with CO Number
	L	T/A	CO
UNIT NO.1 : Functional Grammer	6		
Common errors. Transformation of Sentences, Phrases, Idioms & Proverbs. [50 sentences of common errors, 50 examples of Transformation of Sentences,(5 each type),50noun/prepositional phrases, 50idioms/proverbs]			
UNIT NO.2: English for Competitive Exams & Interview Techniques:	6		
IPA (vowel & consonant phonemes), Word building (English words /phrases derived from other languages), Technical Jargons, Synonyms/Antonyms, Analogies, Give one word for, Types & Techniques of Interview Assignment : [25 Words for teaching IPA, 25 words/phrases of foreign origin, 25 technical jargons, 25 words for Synonyms/ Antonyms, 25 words for Analogies, 50 examples of give one word for]			
UNIT NO.3 Formal Correspondence	6		
Business Letters, e-mail etiquettes [Orders, Complaints, Enquiries, Job applications and Resume Writing, Writing Memorandum, Circulars, notices]			
UNIT NO.4 Analytical comprehension	4		
Four fictional & four non-fictional unseen texts			

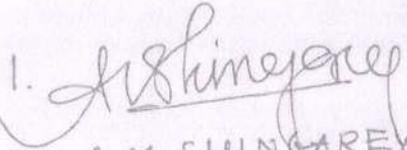


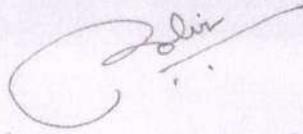
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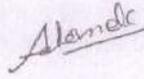
UNIT NO.5 Technical & Scientific Writing:	6		
Features of Technical Writing, Writing Scientific Projects, Technical Report writing, Writing Manuals, Writing Project Proposals, Writing Research papers. Assignment: (Any one project/review as assignment)			

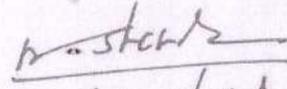
Reference Books:

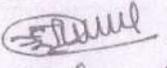
1. - EffectivetechnicalCommunicationbyBarunK. Mitra, OxfordUniversityPress,
2. TechnicalCommunication- PrinciplesandPracticebyMeenakshiRaman&Sharma, OxfordUniversityPress, 2011, ISBN-13-978-0-19-806529-
3. TheCambridgeEncyclopediaooftheEnglish LanguagebyDavidCrystal, CambridgeUniversityPress
4. - ContemporaryBusinessCommunication byScotOber ,PublishedbyBiztantra,
5. BCOM-ASouth- AsianPerspectivebyC. Lehman, D. DuFrene&M. Sinha, CenageLearningPvt. Ltd. 2012
6. BusinessEnglish, byDeptofEnglish, UniversityofDeihi, PublishedbyDoringKindersle y(India), Pvt .Ltd., 2009, ISBN978 81 31720776
7. HowtoPrepareaResearchProposal: GuidelinesforFundingandDissertationsintheSoci alandBehavioralSciencesbyKrathwohl&RDavid
8. Technical Writing- ProcessandProductbySharonJ. Gerson&StevenM. Gerson, 3rdedition, PearsonEducat ion Asia, 2000
9. - DevelopingCommunicationskillsbyKrishnaMohan &MeeraBanerjee

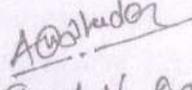
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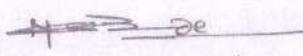
2. 
(Rohit S. Mane)

3. 
(Dr. A.M. Pande)

4. 
Dr. A.M. Shinde

5. 
Tushar G. Shende

6. 
(Dr. A.N. Balhade)

7. 
(Dr. A.N. Shrikhande)
Chairman, BOS (Civil)




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FACULTY OF SCIENCE & TECHNOLOGY
B. TECH CIVIL ENGINEERING (CHOICE BASED CREDIT SYSTEM)

Sem: V	Total Hours Distribution per week		
Total Credit: 03	Lecture (L): 3 Hrs	Tutorial/Activity (T/A): 0 Hrs.	Practical (P): 0 Hrs.
Subject Code	BTCVE504T	Name of Subject: Professional Practice, Law & Ethics	
Examination Scheme			
Internal Marks:	University Marks:	Minimum Passing Marks:	Examination Duration:
30 Marks (15 Marks for sessional examination) (15 Marks for Activity based)	70 Marks	45 Marks	3 Hours

Course Objective	
1	The objective of this course is to inculcate the sense of social responsibility among learners and to make them realize the significance of ethics in professional environment so as to make them a global citizen

Course Outcome	
After completion of syllabus student able to	
1	Understand basic purpose of profession, professional ethics and various moral and social issues.
2	Analyse various moral issues and theories of moral development
3	Realize their roles of applying ethical principles at various professional levels
4	Identify their responsibilities for safety and risk benefit analysis.
5	understand their constructive roles in dealing various global issues



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MAPPING OF CO WITH PO

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BECVE504T 1						2	2	3				1
BECVE504T 2						2	2	3				1
BECVE504T 3						2	2	3				1
BECVE504T 4						2	2	3				1
BECVE504T 5						2	2	3				1

1 Low

2 Medium

3 High

SYLLABUS

Unit No.1			
Details of Topic	Allotment of Hours		Mapped with CO Number
	L	T/A	CO
Human Values, Morals, values and Ethics, Integrity, Work ethics, Service learning, Civic virtue, Respect for others, Living peacefully, Caring, Sharing, Honesty, Courage	08		1
Unit No.2			
Engineering Ethics, Senses of 'Engineering Ethics', Variety of moral issues, Moral dilemmas, Moral Autonomy, Kohlberg's theory, Gilligan's theory	07		2
Unit No.3			
Engineering as Social Experimentation, Engineering as Experimentation, Engineers as responsible Experimenters, Codes of Ethics, A Balanced Outlook on Law(Industrial Disputes Act, 1947; Industrial Employment (Standing Orders) Act, 1946; Workmen's Compensation Act, 1923; Building & Other Construction Workers (regulation of employment and conditions of service) Act (1996) and Rules (1998); RERA Act 2017, NBC 2017)	07		3
Unit No.4			
Safety, Responsibilities and rights, Safety and Risk, Assessment of Safety and Risk, Risk Benefit Analysis and Reducing Risk, Collective Bargaining, Professional Rights, Employee Rights	07		4




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Unit No.5			
Global issues, Multinational Corporations, Computer Ethics, Weapons Development, Engineers as Managers, Consulting Engineers, Engineers as Expert Witnesses and Advisors, Corporate Social Responsibility	07		5

References							
Applicable for Unit No.	Name of Book	Name of Author	Name of Publisher	Edition	Category		
					Text Book	Research paper	Reference book
I,II,III, IV,V	Professional Ethics	R. Subramaniam	Oxford Publications, New Delhi.				Yes
	Human Values And Professional Ethics by,	Jayshree Suresh and B. S. Raghavan	S. Chand Publications				Yes
	Ethics in Engineering by-	Mike W. Martin and Roland Schinzinger	Tata McGraw-Hill - 2003.				Yes
	Human Values & Professional Ethics by,	S. B. Gogate	Vikas Publishing House Pvt. Ltd., Noida.				Yes
	Professional Ethics and Human Values	A. Alavudeen, R.Kalil Rahman, and M. Jayakumaran	University Science Press.				Yes
	Engineering Ethics & Human Values	M.Govindarajan, S.Natarajan, and V.S.SenthilKumar	PHI Learning Pvt. Ltd - 2009.				Yes

Signature
Chaitan B. Shende

Signature
 (Dr. A.N. Dabhade)
 BOS member

Signature
 (Dr. Avinash N Shrikhande,
 BOS (Civil Engg) chairman



Signature
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 of Technology, Kalmeshwar,
 Dist. Nagpur-441501

Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur
Faculty of Science & Technology
Course and Examination Scheme of Bachelor of Engineering (Mechanical Engineering)
IV Semester B. E. (Mechanical Engineering)

Sr No	Course Code	Category	Course Title	Teaching Scheme (Hours/Week)			Credits	Examination Scheme							
				L	T	P		Theory			Practical				
								Duration of Exam (Hrs)	Max. Marks College Assessment	Max. Marks University Assessment	Total Marks	Min. Passing Marks	Max. Marks College Assessment	Max. Marks University Assessment	Total Marks
1	BEME401T	Professional core courses	Machining Processes	3	-	-	3	30	70	100	40	-	-	-	-
2	BEME401P	Professional core courses	Machining Processes Lab	-	-	2	1	-	-	-	-	-	-	-	-
3	BEME402T	Professional core courses	Fluid Mechanics & Hydraulic Machines	3	1	-	4	30	70	100	40	25	25	50	25
4	BEME402P	Professional core courses	Fluid Mechanics & Hydraulic Machines Lab	-	-	2	1	-	-	-	-	-	-	-	-
5	BEME403T	Professional core courses	Material Science & Engineering	3	-	-	3	30	70	100	40	25	25	50	25
6	BEME404T	Professional core courses	Mechanics of Materials	3	1	-	4	30	70	100	40	-	-	-	-
7	BEME404P	Professional core courses	Materials Testing Lab	-	-	2	1	-	-	-	-	-	-	-	-
8	BEME405T	Humanities & Social Science	Professional Ethics	3	-	-	3	30	70	100	40	25	25	50	25
9	BEME406P	Mandatory Course	Sports /Yoga / NSS/NCC	-	-	3	Audit (0)	-	-	-	40	-	-	-	-
TOTAL				15	2	9	-	150	350	500	-	75	75	150	-
Semester Total				26			20	Marks 650							



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Dist. Nagpur-441501

Professional Ethics SYLLABUS (Theory)	
Contents	No of hours
Unit I Human Values, Morals, values and Ethics, Integrity, Work ethics, Service learning, Civic virtue, Respect for others, Living peacefully, Caring, Sharing, Honesty, Courage	08
Unit II Engineering Ethics, Senses of 'Engineering Ethics', Variety of moral issues, Moral dilemmas, Moral Autonomy, Kohlberg's theory, Gilligan's theory	07
Unit III Engineering as Social Experimentation, Engineering as Experimentation, Engineers as responsible Experimenters, Codes of Ethics, A Balanced Outlook on Law	07
Unit IV Safety, Responsibilities and rights, Safety and Risk, Assessment of Safety and Risk, Risk Benefit Analysis and Reducing Risk, Collective Bargaining, Professional Rights, Employee Rights	07
Unit V Global issues, Multinational Corporations, Computer Ethics, Weapons Development, Engineers as Managers, Consulting Engineers, Engineers as Expert Witnesses and Advisors, Corporate Social Responsibility	07

References:

Text Books Recommended:

1. Professional Ethics by R. Subramaniam – Oxford Publications, New Delhi.
2. Human Values And Professional Ethics by Jayshree Suresh and B. S. Raghavan, S. Chand Publications
3. Ethics in Engineering by Mike W. Martin and Roland Schinzinger – Tata McGraw-Hill – 2003.
4. Human Values & Professional Ethics by S. B. Gogate, Vikas Publishing House Pvt. Ltd., Noida.
5. Professional Ethics and Human Values by A. Alavudeen, R.Kalil Rahman, and M. Jayakumar – University Science Press.
6. Engineering Ethics & Human Values by M.Govindarajan, S.Natarajan, and V.S.SenthilKumar-PHI Learning Pvt. Ltd – 2009.
7. Professional Ethics and Human Values by Prof.D.R.Kiran-Tata McGraw-Hill – 2013



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FOUR YEAR BACHELOR OF ENGINEERING (B. E.) DEGREE COURSE
SEMESTER: FIFTH
BRANCH: COMPUTER ENGINEERING

Sr. No.	Subject Code	Subjects	Workload				Credit			Marks					
			L	P	T	Total Hrs/Wk	L	P	T	Total	Theory		Practical		
											Sess.	Univ.	Sess.	Univ.	
1	BECME501T	Theory of Computation	4	-	1	5	4	-	1	5	20	80	-	-	100
2	BECME502T	Computer Architecture Organization	4	-	1	5	4	-	1	5	20	80	-	-	100
3	BECME503T	TCP/IP and Internet	4	-	1	5	4	-	1	5	20	80	-	-	100
4	BECME503P	TCP/IP and Internet Lab	-	2	-	2	-	1	-	1	-	-	25	25	50
5	BECME504T	Computer Graphics	4	-	1	5	4	-	1	5	20	80	-	-	100
6	BECME504P	Computer Graphics Lab	-	2	-	2	-	1	-	1	-	-	25	25	50
7	BECME505T	Industrial Economics and Entrepreneurship Development	4	-	-	4	4	-	-	4	20	80	-	-	100
8	BECME506P	Computer Lab -III	-	2	-	2	-	2	-	2	-	-	25	25	50
		Total	20	6	4	30	20	4	4	28	100	400	75	75	650



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Dist. Nagpur-441501

R.T.M.N.U Nagpur
Syllabus of B. E 5th Semester Computer Engineering

BECME505T Industrial Economics and Entrepreneurship Development

Sr. No.	Subject Code	Subject	Workload				Credit				Marks				
			Lecture	Practical	Tutorial	Total Hrs/Week	Lecture	Practical	Tutorial	Total	Theory		Practical		Total Marks
											Sessional	University	Sessional	University	
1	BECME505T	Industrial Economics and Entrepreneurship Development	4	-	-	4	4	-	-	4	20	80	-	-	100

Syllabus:

Unit I :

Industrial economics, Types of Business structures, top and bottom line of the organization, economic analysis of business, economics of operations, economic prudence in business.

Unit II:

Market structures- Monopoly, Oligopoly, and Monopolistic competition. Pricing strategies, business integration-forward backward integration, economies of scale, diseconomies of scale, liberalization, privatization and globalization. Business cycles, optimum size of firm.

Unit III:

The functions of central bank and commercial banks, Foreign Direct Investment, Free trade vs. Protectionism, Capital formation, Inflation, Recession and stagnation, Inclusive growth, Public-Private partnership for development, Multiplier effect, Accelerator effect.

Unit IV:

Entrepreneurship meaning, Major Motives Influencing an Entrepreneur, Factors Affecting Entrepreneurial Growth. Project Formulation, Product development, Market Survey and Research, Demand forecasting techniques, Techno Economic Feasibility Assessment – Preparation of Preliminary Project Reports – Project Appraisal – Sources of Information – Classification of Needs and Agencies.

Unit V:

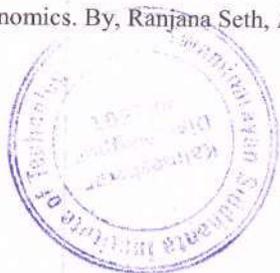
Need – Sources of Finance, Term Loans, Capital Structure, venture capital. Angel funding, Financial Institution, management of working Capital, Costing, Break Even Analysis, Network Analysis Techniques of PERT/CPM – Taxation – Direct, Indirect Taxes.

Unit VI:

Sickness in small business, Major problems faced by SSIs, Foreign Direct Investments and threat to SSI, Technical consultancy organizations, safeguard measures against variation in currency value, Government Policy for Small Scale Enterprises, tax holidays, and incentives to SSIs.

TEXT BOOKS

1. Industrial Economics. By, Ranjana Seth, Ane Book Pvt Ltd.



RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR
FACULTY OF SCIENCE & TECHNOLOGY
BE CIVIL ENGINEERING
(CHOICE BASED CREDIT SYSTEM)

**BECVE306T- EFFECTIVE TECHNICAL
COMMUNICATION
SYLLABUS**

Details of Topic	Allotment of Hours		Mapped with CO Number
	L	T/A	CO
UNIT NO.1 : Functional Grammer	6		
Common errors. Transformation of Sentences, Phrases, Idioms & Proverbs. [50 sentences of common errors, 50 examples of Transformation of Sentences,(5 each type),50noun/prepositional phrases, 50idioms/proverbs]			
UNIT NO.2: English for Competitive Exams & Interview Techniques:	6		
IPA (vowel & consonant phonemes), Word building (English words /phrases derived from other languages), Technical Jargons, Synonyms/Antonyms, Analogies, Give one word for, Types & Techniques of Interview Assignment : [25 Words for teaching IPA, 25 words/phrases of foreign origin, 25 technical jargons, 25 words for Synonyms/ Antonyms, 25 words for Analogies, 50 examples of give one word for]			
UNIT NO.3 Formal Correspondence	6		
Business Letters, e-mail etiquettes [Orders, Complaints, Enquiries, Job applications and Resume Writing, Writing Memorandum, Circulars, notices]			
UNIT NO.4 Analytical comprehension	4		
Four fictional & four non-fictional unseen texts			

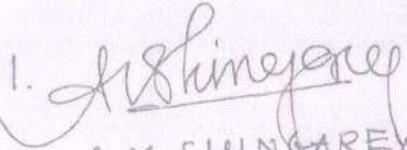


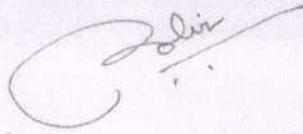
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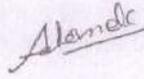
UNIT NO.5 Technical & Scientific Writing:	6		
Features of Technical Writing, Writing Scientific Projects, Technical Report writing, Writing Manuals, Writing Project Proposals, Writing Research papers. Assignment: (Any one project/review as assignment)			

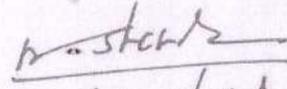
Reference Books:

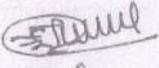
1. - EffectivetechnicalCommunicationbyBarunK. Mitra, OxfordUniversityPress,
2. TechnicalCommunication- PrinciplesandPracticebyMeenakshiRaman&Sharma, OxfordUniversityPress, 2011, ISBN-13-978-0-19-806529-
3. TheCambridgeEncyclopediaooftheEnglish LanguagebyDavidCrystal, CambridgeUniversityPress
4. - ContemporaryBusinessCommunication byScotOber ,PublishedbyBiztantra,
5. BCOM-ASouth- AsianPerspectivebyC. Lehman, D. DuFrene&M. Sinha, CenageLearningPvt. Ltd. 2012
6. BusinessEnglish, byDeptofEnglish, UniversityofDeihi, PublishedbyDoringKindersle y(India), Pvt .Ltd., 2009, ISBN978 81 31720776
7. HowtoPrepareaResearchProposal: GuidelinesforFundingandDissertationsintheSoci alandBehavioralSciencesbyKrathwohl&RDavid
8. Technical Writing- ProcessandProductbySharonJ. Gerson&StevenM. Gerson, 3rdedition, PearsonEducat ion Asia, 2000
9. - DevelopingCommunicationskillsbyKrishnaMohan &MeeraBanerjee

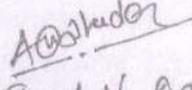
1. 
A.M. SHINGAREY

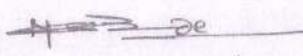
2. 
(Rohit S. Mane)

3. 
(Dr. A.M. Pande)

4. 
Dr. A.M. Shinde

5. 
Tushar G. Shende

6. 
(Dr. A.N. Balhade)

7. 
(Dr. A.N. Shrikhande)
Chairman, BOS (Civil)




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RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR
FACULTY OF SCIENCE & TECHNOLOGY
B. TECH CIVIL ENGINEERING (CHOICE BASED CREDIT SYSTEM)

Sem: V	Total Hours Distribution per week		
Total Credit: 03	Lecture (L): 3 Hrs	Tutorial/Activity (T/A): 0 Hrs.	Practical (P): 0 Hrs.
Subject Code	BTCVE504T	Name of Subject: Professional Practice, Law & Ethics	
Examination Scheme			
Internal Marks:	University Marks:	Minimum Passing Marks:	Examination Duration:
30 Marks (15 Marks for sessional examination) (15 Marks for Activity based)	70 Marks	45 Marks	3 Hours

Course Objective	
1	The objective of this course is to inculcate the sense of social responsibility among learners and to make them realize the significance of ethics in professional environment so as to make them a global citizen

Course Outcome	
After completion of syllabus student able to	
1	Understand basic purpose of profession, professional ethics and various moral and social issues.
2	Analyse various moral issues and theories of moral development
3	Realize their roles of applying ethical principles at various professional levels
4	Identify their responsibilities for safety and risk benefit analysis.
5	understand their constructive roles in dealing various global issues



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MAPPING OF CO WITH PO

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BECVE504T 1						2	2	3				1
BECVE504T 2						2	2	3				1
BECVE504T 3						2	2	3				1
BECVE504T 4						2	2	3				1
BECVE504T 5						2	2	3				1

1 Low

2 Medium

3 High

SYLLABUS

Unit No.1			
Details of Topic	Allotment of Hours		Mapped with CO Number
	L	T/A	CO
Human Values, Morals, values and Ethics, Integrity, Work ethics, Service learning, Civic virtue, Respect for others, Living peacefully, Caring, Sharing, Honesty, Courage	08		1
Unit No.2			
Engineering Ethics, Senses of 'Engineering Ethics', Variety of moral issues, Moral dilemmas, Moral Autonomy, Kohlberg's theory, Gilligan's theory	07		2
Unit No.3			
Engineering as Social Experimentation, Engineering as Experimentation, Engineers as responsible Experimenters, Codes of Ethics, A Balanced Outlook on Law(Industrial Disputes Act, 1947; Industrial Employment (Standing Orders) Act, 1946; Workmen's Compensation Act, 1923; Building & Other Construction Workers (regulation of employment and conditions of service) Act (1996) and Rules (1998); RERA Act 2017, NBC 2017)	07		3
Unit No.4			
Safety, Responsibilities and rights, Safety and Risk, Assessment of Safety and Risk, Risk Benefit Analysis and Reducing Risk, Collective Bargaining, Professional Rights, Employee Rights	07		4




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Unit No.5			
Global issues, Multinational Corporations, Computer Ethics, Weapons Development, Engineers as Managers, Consulting Engineers, Engineers as Expert Witnesses and Advisors, Corporate Social Responsibility	07		5

References							
Applicable for Unit No.	Name of Book	Name of Author	Name of Publisher	Edition	Category		
					Text Book	Research paper	Reference book
I,II,III, IV,V	Professional Ethics	R. Subramaniam	Oxford Publications, New Delhi.				Yes
	Human Values And Professional Ethics by,	Jayshree Suresh and B. S. Raghavan	S. Chand Publications				Yes
	Ethics in Engineering by-	Mike W. Martin and Roland Schinzinger	Tata McGraw-Hill - 2003.				Yes
	Human Values & Professional Ethics by,	S. B. Gogate	Vikas Publishing House Pvt. Ltd., Noida.				Yes
	Professional Ethics and Human Values	A. Alavudeen, R.Kalil Rahman, and M. Jayakumaran	University Science Press.				Yes
	Engineering Ethics & Human Values	M.Govindarajan, S.Natarajan, and V.S.SenthilKumar	PHI Learning Pvt. Ltd - 2009.				Yes

Signature
Chaitanya S. Shende

Signature
 (Dr. A.N. Dabhade)
 BOS member

Signature
 (Dr. Avinash N Shrikhande,
 BOS (Civil Engg) chairman



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 Dist. Nagpur-441501

Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur
Faculty of Science & Technology
Course and Examination Scheme of Bachelor of Engineering (Mechanical Engineering)
IV Semester B. E. (Mechanical Engineering)

Sr No	Course Code	Category	Course Title	Teaching Scheme (Hours/Week)			Credits	Examination Scheme							
				L	T	P		Theory			Practical				
								Duration of Exam (Hrs)	Max. Marks College Assessment	Max. Marks University Assessment	Total Marks	Min. Passing Marks	Max. Marks College Assessment	Max. Marks University Assessment	Total Marks
1	BEME401T	Professional core courses	Machining Processes	3	-	-	3	30	70	100	40	-	-	-	-
2	BEME401P	Professional core courses	Machining Processes Lab	-	-	2	1	-	-	-	-	25	25	50	25
3	BEME402T	Professional core courses	Fluid Mechanics & Hydraulic Machines	3	1	-	4	30	70	100	40	-	-	-	-
4	BEME402P	Professional core courses	Fluid Mechanics & Hydraulic Machines Lab	-	-	2	1	-	-	-	-	25	25	50	25
5	BEME403T	Professional core courses	Material Science & Engineering	3	-	-	3	30	70	100	40	-	-	-	-
6	BEME404T	Professional core courses	Mechanics of Materials	3	1	-	4	30	70	100	40	-	-	-	-
7	BEME404P	Professional core courses	Materials Testing Lab	-	-	2	1	-	-	-	-	25	25	50	25
8	BEME405T	Humanities & Social Science	Professional Ethics	3	-	-	3	30	70	100	40	-	-	-	-
9	BEME406P	Mandatory Course	Sports /Yoga / NSS/NCC	-	-	3	Audit (0)	-	-	-	40	-	-	-	-
TOTAL				15	2	9	-	150	350	500	-	75	75	150	-
Semester Total				26			20	Marks 650							



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Professional Ethics SYLLABUS (Theory)	
Contents	No of hours
Unit I Human Values, Morals, values and Ethics, Integrity, Work ethics, Service learning, Civic virtue, Respect for others, Living peacefully, Caring, Sharing, Honesty, Courage	08
Unit II Engineering Ethics, Senses of 'Engineering Ethics', Variety of moral issues, Moral dilemmas, Moral Autonomy, Kohlberg's theory, Gilligan's theory	07
Unit III Engineering as Social Experimentation, Engineering as Experimentation, Engineers as responsible Experimenters, Codes of Ethics, A Balanced Outlook on Law	07
Unit IV Safety, Responsibilities and rights, Safety and Risk, Assessment of Safety and Risk, Risk Benefit Analysis and Reducing Risk, Collective Bargaining, Professional Rights, Employee Rights	07
Unit V Global issues, Multinational Corporations, Computer Ethics, Weapons Development, Engineers as Managers, Consulting Engineers, Engineers as Expert Witnesses and Advisors, Corporate Social Responsibility	07

References:

Text Books Recommended:

1. Professional Ethics by R. Subramaniam – Oxford Publications, New Delhi.
2. Human Values And Professional Ethics by Jayshree Suresh and B. S. Raghavan, S. Chand Publications
3. Ethics in Engineering by Mike W. Martin and Roland Schinzinger – Tata McGraw-Hill – 2003.
4. Human Values & Professional Ethics by S. B. Gogate, Vikas Publishing House Pvt. Ltd., Noida.
5. Professional Ethics and Human Values by A. Alavudeen, R.Kalil Rahman, and M. Jayakumar – University Science Press.
6. Engineering Ethics & Human Values by M.Govindarajan, S.Natarajan, and V.S.SenthilKumar-PHI Learning Pvt. Ltd – 2009.
7. Professional Ethics and Human Values by Prof.D.R.Kiran-Tata McGraw-Hill – 2013



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FOUR YEAR BACHELOR OF ENGINEERING (B. E.) DEGREE COURSE
SEMESTER: FIFTH
BRANCH: COMPUTER ENGINEERING

Sr. No.	Subject Code	Subjects	Workload				Credit			Marks					
			L	P	T	Total Hrs/Week	L	P	T	Total	Theory		Practical		
											Sess.	Univ.	Sess.	Univ.	
1	BECME501T	Theory of Computation	4	-	1	5	4	-	1	5	20	80	-	-	100
2	BECME502T	Computer Architecture Organization	4	-	1	5	4	-	1	5	20	80	-	-	100
3	BECME503T	TCP/IP and Internet	4	-	1	5	4	-	1	5	20	80	-	-	100
4	BECME503P	TCP/IP and Internet Lab	-	2	-	2	-	1	-	1	-	-	25	25	50
5	BECME504T	Computer Graphics	4	-	1	5	4	-	1	5	20	80	-	-	100
6	BECME504P	Computer Graphics Lab	-	2	-	2	-	1	-	1	-	-	25	25	50
7	BECME505T	Industrial Economics and Entrepreneurship Development	4	-	-	4	4	-	-	4	20	80	-	-	100
8	BECME506P	Computer Lab -III	-	2	-	2	-	2	-	2	-	-	25	25	50
		Total	20	6	4	30	20	4	4	28	100	400	75	75	650



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Dist. Nagpur-441501

R.T.M.N.U Nagpur
Syllabus of B. E 5th Semester Computer Engineering

BECME505T Industrial Economics and Entrepreneurship Development

Sr. No.	Subject Code	Subject	Workload				Credit				Marks				
			Lecture	Practical	Tutorial	Total Hrs/Week	Lecture	Practical	Tutorial	Total	Theory		Practical		Total Marks
											Sessional	University	Sessional	University	
1	BECME505T	Industrial Economics and Entrepreneurship Development	4	-	-	4	4	-	-	4	20	80	-	-	100

Syllabus:

Unit I :

Industrial economics, Types of Business structures, top and bottom line of the organization, economic analysis of business, economics of operations, economic prudence in business.

Unit II:

Market structures- Monopoly, Oligopoly, and Monopolistic competition. Pricing strategies, business integration-forward backward integration, economies of scale, diseconomies of scale, liberalization, privatization and globalization. Business cycles, optimum size of firm.

Unit III:

The functions of central bank and commercial banks, Foreign Direct Investment, Free trade vs. Protectionism, Capital formation, Inflation, Recession and stagnation, Inclusive growth, Public-Private partnership for development, Multiplier effect, Accelerator effect.

Unit IV:

Entrepreneurship meaning, Major Motives Influencing an Entrepreneur, Factors Affecting Entrepreneurial Growth. Project Formulation, Product development, Market Survey and Research, Demand forecasting techniques, Techno Economic Feasibility Assessment – Preparation of Preliminary Project Reports – Project Appraisal – Sources of Information – Classification of Needs and Agencies.

Unit V:

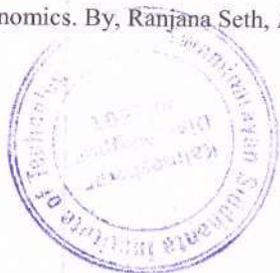
Need – Sources of Finance, Term Loans, Capital Structure, venture capital. Angel funding, Financial Institution, management of working Capital, Costing, Break Even Analysis, Network Analysis Techniques of PERT/CPM – Taxation – Direct, Indirect Taxes.

Unit VI:

Sickness in small business, Major problems faced by SSIs, Foreign Direct Investments and threat to SSI, Technical consultancy organizations, safeguard measures against variation in currency value, Government Policy for Small Scale Enterprises, tax holidays, and incentives to SSIs.

TEXT BOOKS

1. Industrial Economics. By, Ranjana Seth, Ane Book Pvt Ltd.



R.T.M.N.U Nagpur
Syllabus of B. E 5th Semester Computer Engineering

2. Modern Economic Theory By, K.K. Dewett. S.Chand.
3. Industrial Economics. By, Jagdish Sheth, Pearson Publication.
4. "Entrepreneurial Development" By, S.S.Khanka S.Chand & Co. Ltd. Ram Nagar New Delhi, 1999.
5. Hisrich R D and Peters M P, "Entrepreneurship" 5th Edition Tata McGraw-Hill, 2002.
6. Management of Entrepreneurship. By, N.V.R. Naidu, I.K. International Pvt Ltd.
7. Entrepreneurial Development. By, S.Anil Kumar. New Age International.
8. Small- Scale Industries and Entrepreneurship, By, Dr. Vasant Desai, Himalaya Publication.

REFERENCE BOOKS:

1. Business Economics. By, K.Rajgopalchar. Atalantic Publishers.
2. Microeconomics. By, Robert Pindyk
3. Business Economics. By, H.L. Ahuja,H. L. Ahuja,Louis Prof. De Broglie. S.Chand.
4. Rabindra N. Kanungo "Entrepreneurship and innovation", Sage Publications, New Delhi, 1998.
5. Financing Small Scale Industries in India, By, K.C.Reddy.Himalaya Publication.




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Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur

Faculty of Science & Technology

Course and Examination Scheme of Bachelor of Engineering (Mechanical Engineering)

V Semester B. E. (Mechanical Engineering)

Sr No	Course Code	Category	Course Title	Teaching Scheme (Hours/Week)			Credits	Examination Scheme										
				L	T	P		Theory				Practical						
								Duration of Exam (Hrs)	Max. Marks College Assessment	Max. Marks University Assessment	Total Marks	Min. Passing Marks	Max. Marks College Assessment	Max. Marks University Assessment	Total Marks	Min. Passing Marks		
1	BEME501T	Professional core courses	Heat Transfer	3	1	-	4	3	20	80	100	40						
2	BEME501P	Professional core courses	Heat Transfer Lab	-	-	2	1	-	-	-	-	-	25	25	50	25		
3	BEME502T	Professional core courses	Energy Conversion-I	3	1	-	4	3	20	80	100	40						
4	BEME503T	Professional core courses	Design of Machine Elements	3	1	-	4	3	20	80	100	40						
5	BEME503P	Professional core courses	Design of Machine Elements Lab	-	-	2	1	-	-	-	-	-	25	25	50	25		
6	BEME504T	Humanities, Social Sciences & Management courses	Industrial Economics and Management	3	-	-	3	3	20	80	100	40						
7	BEME505T	Open Elective Course	Open Elective -I	3	-	-	3	3	20	80	100	40						
8	BEME506P	Project work, seminar and internship in industry or elsewhere	Industrial Visit*	-	-	2	1	-	-	-	-	-	50	-	50	-		
9	BEME507P	Mandatory Course	Performing Art	-	-	3	Audit (0)											
TOTAL				15	3	9	-	-	100	400	500	-	100	50	150	-		
Semester Total				27				21	Marks 650									



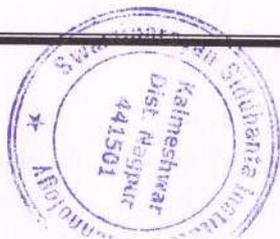
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SYLLABUS- Industrial Economics & Management-BEME504T

Contents	No of hours
Unit I Industrial Economics: Law of demand, Demand analysis, Types of demand, Determinants of demand, Supply, Law of diminishing marginal utility, Elasticity of demand, Types of elasticity of demand.	08
Unit II Factors of production, Firm and Industry, Law of return, Cost concepts, Fixed variable, Average, Marginal and Total cost, Depreciation and methods for depreciation, direct and indirect taxes	08
Unit III Inflation, effect of inflation, Monetary and fiscal measures to control inflation, deflation, Market and market structures, Perfect competition, Monopoly, Monopolistic competition, Oligopoly, Concept & overview of share market, Effect of share market on economy, Share market terminologies	08
Unit IV Definition, nature and scope of management, functions of management, Meaning and concepts of Marketing management, Marketing Mix, Channels of distribution, Advertising and sales promotion.	08
Unit V Meaning, nature and scope of financial management , Brief outline of profit and loss account, balance sheet, Budgets and their importance, Types of budgets- Rigid and flexible budgets.	08

Books Recommended:**Text Books**

1. Modern Economics, H. L. Ahuja, S.Chand Publishers
2. Modern Economic Theory, K. K. Dewett., S. Chand Publishers
3. Engineering Economics, D. N. Dwivedi, A. Dwivedi, Vikas Publishing House
4. Industrial Management I.K. Chopde, A.M. Sheikh
5. Business Organization and Management S.A. Sherlekar



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Scheme of Examination B.E. First year (All Branches of Engineering)

Second Semester

Sub Code	Subjects	Workload in hrs			Credits	Marks				Minimum Passing Marks		
		L	T/A			P	Theory		Practical		Theory	Practical
			Internal	Uni			Internal	Uni	Total			
BSE2-1T	Mathematics-II	3	1	-	4	30	70	-	-	100	45	-
BSE2-2T	Advanced Engineering Materials	2	2	-	3	30	70	-	-	100	45	-
BSE2-3T	Applied Chemistry	3	2	-	4	30	70	-	-	100	45	-
BSE2-4T	Computational Skills	2	-	-	2	15	35	-	-	50	23	-
BSE2-6T	Basics of Electrical Engineering	2	-	-	2	15	35	-	-	50	23	-
BSE2-7T	Engineering Mechanics	2	-	-	2	15	35	-	-	50	23	-
BSE2-8T	Indian Culture & Constitution	2	-	-	Audit	50	-	-	-	Audit	-	-
BSE1-5P	Workshop Practices	-	-	4	2	-	-	50	50	100	-	50
BSE2-2P	Advanced Engineering Materials	-	-	2	1	-	-	25	25	50	-	25
BSE2-3P	Applied Chemistry	-	-	3	1.5	-	-	25	25	50	-	25
BSE2-4P	Computational Skills	-	-	2	1	-	-	25	25	50	-	25
Three weeks Induction Program												
Total		16	5	11	22.5	135*	315	125	125	700		

- L- Lecture, P-Practical, T- Tutorial, A- Activity (Half Credit per Hour)
- * Audit course marks are not counted in total marks

Guidelines

- Energy and Environment shall be taught by faculty of Chemistry and will come under board of Applied Science and Humanities (only by Chemistry Dept)
- Advance Engineering Materials shall be taught by faculty of Physics and will come under board of Applied Science and Humanities (only by Physics Dept)



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Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur

Subject: Indian Culture and Constitution (ICC) BSE 2-8T

Semester: II

Course: Audit (Non-credit), Total Marks: 50 (Internal)

Credit: Nil, Teaching Load: 2(Theory)/week

Course Objective:

1. To create an understanding of Indian Constitution and develop respect for the same.
2. To create awareness of India as a State Indian culture and Tradition.

Course Outcomes:

1. Students will become aware of Indian culture and civilization and their role in development of society.
2. Students will understand Industrial work-culture.
3. Students will be sensitized towards professional ethics.
4. Students will understand Indian Constitution and governance of the country.
5. Students will be able to understand the structure and system of work organizations.

Abdul
(Dr. Sajid Anwar)



Principle
Principal R.R. Chide
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SYLLABUS:**Unit-I**

1. Concept of Culture and Civilization
2. Vedic Civilization and Indus Valley Civilization
3. Introduction to Vedas, Ashram system, Varna System
4. Concept of Social Engineering (5 Hours)

Unit-II

1. Meaning and Scope of Industrial Psychology and Industrial Sociology
2. Recruitment, Selection and Training of Workers,
3. Fatigue in industry.
4. Motives for work in industry (5 Hours)

Unit-III

1. Sustainable Development
2. Social change .
3. Professional Ethics
4. Concept and styles of Leadership in Industry. (4 Hours)

Unit-IV

1. Indian Constitution and Federal System
2. Fundamental Rights and Directive Principles of State Policy
3. Role of Bureaucracy in Modern Society
4. Socio-Legal Awareness: Right to Information(RIL), Public Interest Litigation(PIL) (5 Hours)

Abhishek



Girija
Dr. M. V. Girija

RR
(R. R. Chide)

RS
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Unit-V

1. Industrial Democracy
2. Works Organization: Formal and Informal Organization
3. Concept of Power, Authority and Status system;
4. Industrialization, Urbanization and Study of Slums in India . (5 Hours)

Books Recommended:

- 1) A New Look into Social Sciences- Shabbir, Sheik and Dwadashiwar
- 2) An Introduction to Sociology- Vidya Bhushan and Sachdeva
- 3) Social Science: The Indian Scene-Yogesh Atal
- 4) Applied Humanities-Rajni Tandon
- 5) A History of World Civilizations-J.E.Swain
- 6) Industrial Psychology-Haire Mason
- 7) Introduction to Constitution of India- Durga Das Basu
- 8) Industrial Sociology in India-N.R.Seth
- 9) Human Resource Development and Management- Dr.A.M.Sheikh
- 10) The Economics of Sustainable Development-Surender Kumar

Note: As AICTE has recommended that students of Engineering should learn about Indian Constitution and Indian tradition, we propose above non-credit subject entitled 'Indian Culture and Constitution' to be included in second semester for all branches.

Abhis

Arbhara
(Arbhara)

Giriy
Anm. v. Giriy (B.R. Chide)



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Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur
Four Years B.E. Course

Scheme of Examination B.E. First year (All Branches of Engineering)

First Semester

Sub Code	Subjects	Workload in hrs			Credits	Marks				Minimum Passing Marks		
		L	T/A	P		Theory		Practical		Total	Theory	Practical
						Internal	Uni	Internal	Uni			
BSE1-1T	Mathematics-I	3	1	-	4	30	70	-	-	100	45	-
BSE1-2T	Applied Physics	3	2	-	4	30	70	-	-	100	45	-
BSE1-3T	Energy and Environment	2	2	-	3	30	70	-	-	100	45	-
BSE1-4T	Communication Skills	2	-	-	2	15	35	-	-	50	23	-
BSE1-5T	Engineering Graphics	1	-	-	1	15	35	-	-	50	23	-
BSE1-6T	Basics of Civil & Mechanical Engineering	4	-	-	Audit	50	-	-	-	Audit	-	-
BSE1-2P	Applied Physics Lab	-	-	3	1.5	-	-	25	25	50	-	25
BSE1-3P	Energy and Environment Lab	-	-	2	1	-	-	25	25	50	-	25
BSE1-4P	Communication Skills Lab	-	-	2	1	-	-	25	25	50	-	25
BSE1-5P	Engineering Graphics Lab	-	-	4	2	-	-	25	25	50	-	25
Three weeks Induction Program		-	-	-	-	-	-	-	-	-	-	-
Total		15	11		19.5	120*	280	100	100	600		

- L- Lecture , P-Practical, T- Tutorial , A- Activity (Half Credit per Hour)



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Subject: Communication Skills

Total Credits:02

Sub.Code: BSE1-4T

2020-21, Semester: I

Teaching Scheme

Lectures: 2 Hours/ Week (Theory)

Examination Scheme

T (U) : 35 Marks T (I) : 15 Marks

Duration of University Exam. : 02 Hours

Course Objective: To enhance competency in English language among learners.

Course Outcomes:

1. Students will be able to overcome barriers of communication.
2. Students will acquire public speaking skills and handle group situations professionally.
3. Students will be able to comprehend passages and compose paragraphs.
4. Students will be able to construct error free and meaningful sentences in English.

Dr. M. N. Gmiya
 (Dr. Sajid Anwar)

BR
 (B. R. Chide)

ABH
 (Anshu)



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Syllabus of Communication Skills (Theory)

Unit 1:A. Introduction to Communication, Importance of Communication, Process of Communication, Types of communication- Verbal and Non Verbal

B. Oral and Written Communication, Barriers to Communication and methods to overcome them. (6 hours)

Unit 2: A. Listening Skills, Importance of Listening, Types of Listening, Listening Barriers and methods to overcome them .

B. Effective Speaking Skills, Components of Public Speaking, Overcoming stage fear in public speaking, Group Discussion-Process and techniques (6 hours)

Unit 3:A. Reading Skills, Importance of Reading, Sources of Reading, Skimming, Scanning, Comprehending passage

B. Writing Skills, Process and Techniques of Composition-Précis, Paragraph, Essay (6 hours)

Unit 4:A. Basic Grammar: Tenses and its types, Sentences and its types

B. Transformation of Sentences- Assertive-Imperative-Interrogative-Exclamatory, Reported Speech.(6 hours)

Books Recommended:

1. Technical Communication by Meenakshi Raman and Sangeeta Sharma, OUP
2. Public Speaking and Influencing Men in Business by Dale Carnegie
3. Essentials of English Grammar by Micheal Swan
4. Professional Communication Skills by Bhatia and Sheikh
5. Business Communication by K.K. Sinha
6. Communication Skills by Dr. P. Prasad
7. Communication Skills by Sanjeev Kumar and Pushpalata, OUP

B. Agrawal
(Dr. Bhruvika Agrawal)

D. Doralf
(Dr. Dora Thompson)

Nawaz
(Dr. Nawaz Khan)

Abul
(Dr. Sajid Anwar)

BR
(B. R. Chide)

Geeje
Dr. M. V. Giniya

Ar Bhatia



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Subject: Communication Skills

Total Credits:01

2020-21, Semester: I

Sub.Code : BSE1-4P

Teaching Scheme

Practical : 2 Hours/ Week Practical

Examination Scheme

P (U) : 25 Marks P(I) : 25 Marks

Duration of University Exam. : 03 Hours

Course Objective: To enhance competency in all the four skills (LSRW) of English language among learners.

Course Outcomes:

1. Students will be able to overcome listening barriers of communication.
2. Students will be able to enhance their comprehending skills and speaking skills.
3. Students will be able to give effective presentations and handle group situations professionally
4. Students will be able to use figurative language in their formal as well as informal communication.

Giriyga
Dr m.n. Giriyga

Abbas
(Dr. Sajid Anwar)

DR
(B.R. Chide)



DR
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Syllabus of Communication Skills (Practical)

1. Barriers to Communication- Overcoming listening barriers
2. Non-verbal Communication
3. Reading Skills
4. Speaking Skills
5. Presentation Skills
6. Group Discussion
7. Interview Techniques
8. Use of Figurative Language

B. Agrawal
(Dr. Bhumika Agrawal)

Abhishek
(Dr. Sajid Anwar)

B.R.
(B.R. Chide)

Dorothy
(Dr. Dora Thompson)

Giriyoga
Dr. M. V. Giriyoga

Nawaz
(Dr. Nawaz Khan)

Abhishek
(Dr. Anwar)



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RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR
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BE - CIVIL ENGINEERING
(CHOICE BASED CREDIT SYSTEM)

Sem: IV (4th)	Total Hours Distribution per week		
Total Credit : 3	Lecture (L): 3 Hrs	Tutorial/Activity (T/A): NA	
Subject Code	BECVE403T	ENVIRONMENTAL ENGINEERING	
Examination Scheme			
Internal Marks:	University Marks:	Minimum Passing Marks:	Examination Duration:
30 Marks (15marks for sessional Examination) (15 Marks for Activity based)	70 Marks	45 Marks	3 Hours

Course Objectives	
1	The course will provide students knowledge regarding the sources of water, water demands, population forecasting, characteristics, standards of drinking water
2	To prepare students to analyze, plan and design of various phases of water supply systems and waste water treatment.
3	To provide the students the knowledge regarding the various characteristics of water, waste water estimation of the quantity of water
4	The course will provide students with fundamentals of air pollution and solid waste management, climate change, geo environment and sustainable resource management

Course Outcomes	
After completion of syllabus, students would be able to	
1	Have knowledge of characteristics of water, drinking water standards and necessity of treatment.
2	Design various units of conventional water treatment plant.
3	Understand the characteristics of waste water, necessity of treatment, types of treatment processes
4	Equip with the basic knowledge related to design of waste water treatment
5	Understand of significance of air pollution, solid waste, climate change, geo environment etc



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MAPPING OF CO WITH PO

CO → PO →	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1	3	3	3	3						1		3
2	3	3	3	3						1		3
3	3	3	3	3						1		3
4	3	3	3	3	1					1		3
5	3	3	3	3	1					1		3

1 Low

2 Medium

3 High


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FACULTY OF SCIENCE & TECHNOLOGY
BE - CIVIL ENGINEERING

(CHOICE BASED CREDIT SYSTEM)

BECVE403T – ENVIRONMENTAL ENGINEERING

SYLLABUS

Details of Topic	Allotment of Hours		Mapped with CO Number
	L	T/A	CO
UNIT NO.1			
Introduction: Basics of water supply scheme, Water Demand, population forecasting methods, Sources of water & intake structures.	2		1
Conveyance of water: Types of pipes, joints, fittings, valves & appurtenances.	2		
Water quality: characteristics of water, Standards of drinking water. (WHO 2011, CPHEEO, IS 10500-2016).	2		
Water Treatment: Objective of water treatment, flow sheet of conventional water treatment plant.	1		
Sedimentation: Principles, types of setting basins, inlet and outlet arrangements, simple design of sedimentation tank.	2		
UNIT NO.2			
Coagulation and Flocculation: Definition, Principles, types of coagulants, coagulant doses, types of mixing and flocculation devices, Clariflocculators.	3		2
Filtration: Mechanism of filtration Types of filters-RSF, SSF, Pressure filters, sand specification, operational problems.Simple design of SSF and RSF, Membrane filtration technique of water treatment.	3		
Disinfection: Purpose, Mechanism, disinfectants, disinfection by chlorination. Type of chlorination.	2		
Distribution systems: Requirements & methods of distribution systems with layouts	1		




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UNIT NO.3			
General Introduction: Study of waste water, black water & grey water. System of collection and conveyance of sewage- separate and combined systems, patterns of sewage collection systems. Quantity of storm water and sanitary waste water, Problems on quantity estimation.	3		3
Sewer: Types, Shapes, Hydraulic Design (Capacity, Size, Grade, etc.), Construction of sewer - Shoring, Trenching and laying to grade. Sewer materials, Sewer Appurtenances - manhole street inlets, storm water overflows, inverted syphons, flushing and ventilation: House plumbing systems, sanitary fitting and appliances, traps, anti-syphonage, inspection chambers and intercepting traps. Sewage pumping - location of pumping station. Sewer testing and maintenance.	3		
Characteristics: Physical and chemical characteristics of wastewater, significance of BOD, COD, BOD rate constant (Problems)	2		
UNIT NO.4			
Preliminary & Primary Treatments: Sewage treatment flow sheet, site selection for sewage treatment plant. Preliminary and primary treatments - Screens, Grit chambers, oil & grease removal, Primary settling tank (Only working principles)	3		4
Secondary treatments - Principle of Biological Treatment, bacterial growth curve, Activated sludge process, trickling filter, sequence batch reactors, oxidation ponds (Only working principles)	2		
Sewage Disposals: Indian Standard for disposal, Methods of disposal, Sewage farming, self-purification of stream (Streeter Phelp's equation, Oxygen sag curve). Recycle & reuse of sewage (Zero discharge concept). Sludge digestion process, sludge drying beds.	2		
Rural sanitation: Pit privy, aqua privy, bio-gas recovery, Septic tank- soak pit (Only working principles). Sullage collection and disposal	2		
UNIT NO.5			
Introduction of air pollution and municipal solid waste, climate change, geo environment, environmental management system and sustainable resource management.	3		5



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References			
Name of Book	Name of Author	Name of Publisher	Edition
Water Supply Engineering	B.C.Punmia, Ashok Jain and Arun Jain	Laxmi Publication	
Water Supply & Sewage	M.J.Macghee	McGraw Hill Publication	
Environmental Engineering Vol - I (Water Supply Engineering) and Environmental Engg Vol. II.	Dr P.N. Modi.	Standard Book House	
Environmental Engineering	Howards Peavy, Donald R. Rowe and George Tchobanoglous.	McGraw Hill Education	
Central Public Health Environmental Engg. Manual	--	(CPHEEO) New Delhi	
Wastewater Engineering: Treatment and Reuse	Metcalf & Eddy	McGraw Hill Education	
Environmental Engineering-Vol II	S.K.Garg	Standard Publication	
Waste Water Engineering	B.C.Punmia, Ashok Jain and Arun Jain	Laxmi Publication	
Water Supply & Sanitary Engineering	G.S.Birdie	DhanpatRai Publication	

1. Ashingarey
A.M. SHINGAREY

2. Colin
(Rohit S. Mane)

3. Shende
(Dr. A.M. Shende)

4. Shende
Dr. A.M. Shende

5. Shende
Chohar G. Shende

6. Ashade
(Dr. A.N. Ashade)

7. Shrikhande
(Dr. A.N. Shrikhande)
chairman, BOS (Civil)



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RTMNU, Nagpur
SYLLABUS FOR FIRST YEAR (SEMESTER I & II) BACHELOR OF TECHNOLOGY
(For All Branches)

Course Code	BESI-3T		
Course Title	Energy and Environment		
Scheme & Credits	L	T/A	Credits
	2	2	3
			Semester I

Examination Scheme	
T (U) : 70 Marks T (I) : 30 Marks	Duration of University Exam. : 03 Hours

Course objectives

1. To impart knowledge in the domain of renewable and non-renewable energy sources.
2. To bring out Impact of Energy Technologies on Environment
3. To inculcate knowledge and skills about assessing the energy efficiency of different energy sources and use of advanced materials for sustainable development.

Course outcomes

After studying the course it is expected that the students will have/be able to:

- CO-1 Obtain the knowledge of solid and gaseous fuels and their Calorific Value determination.
- CO-2 Recognize the type of liquid fuels and their uses in IC engines.
- CO-3 Apply the knowledge about the use of alternative sources of energy& utilize solid waste as energy source
- CO-4 Analyze the impacts of Industrial pollution and its control.
- CO-5 Develop innovative ideas for use of advanced materials in sustainable development.

UNIT 1:- Basics of Energy and Solid Fuels

(8 Hours)

(Marks 14)

- Basics of Energy - Introduction, sources and types of energy, Units of energy, Thermal Basics of energy -fuels, thermal energy contents of fuel, heat capacity, sensible and latent heat, evaporation, condensation, steam, moist air and humidity & heat transfer.
- Classification of fuels, Calorific Value (HCV & LCV). Determination of Calorific value by Bomb and Boy's Calorimeter.
- Solid Fuels:- Significance of Proximate and Ultimate Analysis of coal,
- Numerical based on Dulong's formula.
- Numerical on Goutal's Formula for Gross Calorific Value based on Proximate Analysis
- Numerical on Calorific Value determination.
- Numerical on GCV & NCV by using relation formula (convert answer in joules or one of the CV given in joules)

UNIT 2: Liquid and Gaseous Fuels

(8 Hours)

(Marks 14)

- Liquid Fuel:-Fractional distillation of crude oil, Catalytic cracking and its advantages
- Knocking in internal combustion petrol and diesel engine, Octane and Cetane number, Knocking and its relationship with structure of fuel, Doping agents,
- Power alcohol, Gasohol, Diesehol, Aviation fuel, Bio-diesel.
- Gaseous Fuel:-CNG, H₂ as specialised fuel
- Combustion Calculations.



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UNIT 3:- Alternate Sources of Energy & Waste to Energy Conversion
(8 hours) (Marks 14)

- Bio-energy, Photolysis of water- Chemical Conversion of Solar Energy.
- Nuclear fuels: Numerical on Binding Energy & Average Binding Energy per Nucleon
- Fuel cells- working, advantages and disadvantages of alkaline, methanol fuel cells.
- Classification of waste on the basis of segregation at source, hazardous solid waste management technology: Physical method, chemical method, biological treatment, Eco-friendly Incineration, Depolymerization, landfill techniques.
- Utilization of Biogas and Landfill Gas for Biofuels and High Value Chemicals, gasification and Utilization of Syngas, Thermochemical Conversion of Syngas

UNIT 4:- Environmental impacts of Energy Technologies
(8 Hours) (14 Marks)

- Industrial pollution due to non-renewable energy sources: General Introduction of Industrial pollution and its types. Principle, processes, source of pollution.
- Environmental impact and its control with reference to specific industries; like Nitrogen containing fertilizers- ammonia synthesis, Cement manufacturing Industry; Sulfuric acid manufacturing industry and petroleum Industry

UNIT 5:- Advanced materials for sustainable development
(8 Hours) (14 Marks)

- Introduction of Advance materials, properties and applications:- composites, liquid Crystal polymers, conducting polymers, insulating materials, adhesives, biodegradable polymers.
- Nanomaterials in energy- Photochemical devices like lithium ion batteries, Nanomaterials for Energy Storage, nanomaterials in solar cells.

Books Recommended:

1. Text Book of Engineering Chemistry: S.S. Dara, S. Chand and Company Ltd. New Delhi.
2. Textbook of Engineering Chemistry: P.C. Jain and Monica Jain, Dhanpat Rai and Sons, New Delhi.
3. Materials Chemistry: A.V. Bharati and Walekar, Tech Max Publications, Pune.
4. Energy and Environment: Archana R Chaudhari and Aditi Pandet, S. Chand Publication

Reference Books:

1. A Text book of Engineering Chemistry: Shashi Chawla; Dhanpat Rai & Sons, New Delhi.
2. Applied Chemistry by N. Krishnamurthy: P. Vallinavagam. And K. Jeysubramanian TMH
3. Applied Chemistry for Engineers: T.S. Gyngell.
4. Fuels and Combustion: Amir Circar, Orient Longmans
5. Fundamentals of Engineering Chemistry (Theory and Practice) :S. K. Singh (New Age Materials)
6. Environmental Chemistry: B. K. Sharma
7. Industrial Energy Management and Utilization: L.C. Witte, P.S. Schmidt and D.R. Brown (Hemisphere Publishing Corporation, Washington, 1998)
8. Energy and Environment- NPTEL lecture notes



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ENERGY AND ENVIRONMENT LABORATORY (BESI-3P)

Course Code	BESI-3P				
Course Title	Energy and Environment Lab				
Scheme & Credits	L	T	P	Credits	Semester
	0	0	2	1	I

Examination Scheme	
P (U) : 25 Marks P (I) : 25 Marks	Duration of University Exam. : 03 Hours

Laboratory outcomes

After completion of this course, the student will develop competencies in

1. The practical knowledge of handling chemicals.
2. Analysing a broad foundation in energy and environment that stresses scientific reasoning and analytical problem solving with a molecular perspective.
3. Experimental techniques using modern instrumentation.

Students should-

- Perform any six experiments.
- Study of any one experiment in virtual lab topics based on the syllabus.
- Study of any one demonstration experiment.

- 1) Determination of Flash Point of the given sample by Cleveland's open cup apparatus.
- 2) Determination of Flash Point of the given sample by Abels/ Pensky Martens close cup apparatus.
- 3) Determination of Neutralisation number (Acid value) of oil.
- 4) Determination of Viscosity by Redwood Viscometer and specific gravity of Biodiesel at different temperatures.
- 5) To determine Sulphate Concentration in a given water sample.
- 6) Determination of amount of Chloride (in Cl⁻ form) by Mohr's method.
- 7) Determination of COD of water sample.
- 8) To determine the Total Solids, Suspended Solids and Total Dissolved Solids of a given water sample.
- 9) Determination of turbidity of given water sample by Nephelometry
- 10) Proximate analysis of coal -Determination of % of Moisture and % of Volatile Matter in coal sample
- 11) Proximate analysis of coal -Determination of % of ash in coal sample
- 12) Demonstration of determination of % carbon by Carbon residue conradson apparatus.
- 13) Demonstration of determination of Consistency of grease by Penetrometer.
- 14) Demonstration (Virtual) of determination of Calorific value of solid/liquid fuels.
- 15) Demonstration (Virtual) of estimation of flue gas by Orsat's apparatus.

Activities

1. Preparation of Audit Report for Industry waste generation.
2. Survey of greener synthesis of common drugs (in the form of chart and/or model)
3. Nearby industrial chemicals safety measures
4. Study of Chemical processes involved in nearby industries (Cement, Paper, Electroplating, Water purification industry etc.)
5. Study of separation and recycling techniques of polymers and E-waste.
6. Study of Biogas plant.
7. Study of the production process of biofuels.
8. Study of the biomass briquetting machine.



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SCHEME OF EXAMINATION

B.E. ELECTRONICS & TELECOMMUNICATION / ELECTRONICS & COMMUNICATION ENGINEERING/ ELECTRONICS ENGINEERING

(SEMESTER – III)

Code	Subject	Teaching Scheme					Credit				MARKS				Total Marks
		L	Practical	Tutorial/Activity	Total	L	P	T/A	Total	Theory		Practical			
										Internal	Univ.	Internal	Univ.		
BEETC-301	Applied Maths-III	3	-	1T	4	3	-	1	4	30	70	-	-	100	
BEETC-302T	Components for Electronic circuit design	3	-		3	3	-	-	3	30	70	-	-	100	
BEETC-302P	Components for Electronic circuit design Lab	-	2	-	2	-	1	-	1	-	-	25	25	50	
BEETC-303T	Digital System Design	3	-	1T	4	3	-	1	4	30	70	-	-	100	
BEETC-303P	Digital System Design Lab	-	2	-	2	-	1	-	1	-	-	25	25	50	
BEETC-304P	Network Theory	3	-	-	3	3	-	-	3	30	70	-	-	100	
BEETC-305T	Signal & System	3	-	-	3	3	-	-	3	30	70	-	-	100	
BEETC-306T	Measurement and Instrumentation	3	-	-	3	3	-	-	3	30	70	-	-	100	
BEETC-307P	Electronics Workshop I Lab	-	2	-	2	-	1	-	1	-	-	25	25	50	
BEETC-308T	Consumer affairs	2	-	-	2							-	-	Audit	
Total		20	6	2T	28	18	3	2	23	180	420	75	75	750	



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**SCHEME OF EXAMINATION FOR
B.E. ELECTRONICS & TELECOMMUNICATION / ELECTRONICS & COMMUNICATION ENGINEERING/Electronics Engg.
(SEMESTER – VI)**

Code	Subject	Teaching Scheme						Credit			MARKS				Total Marks
		L	P	T/A	Total	L	T/A	P	T/A	Total	Theory		Practical		
											Internal	Univ.	Internal	Univ.	
BEETC-601T	Computer Communication Network	2	-	-	2	2	-	-	2	2	30	70	-	-	100
BEETC-601P	Computer Communication Network Lab	-	2	-	2	-	1	-	1	-	-	-	25	25	50
BEETC-602T	Internet of Things (IOT)	2	-	-	2	2	-	-	2	30	70	-	-	100	
BEETC-602P	IOT Lab	-	2	-	2	-	1	-	1	-	-	-	25	25	50
BEETC-603T	Wireless Sensor Network	2	-	-	2	2	-	-	2	30	70	-	-	100	
BEETC-603P	Wireless Sensor Network Lab	-	2	-	2	-	1	-	1	-	-	-	25	25	50
BEETC-604PE	PEC-II	2	-	1T	3	2	-	-	1	3	30	70	-	-	100
BEETC-605OE	OE-I	2	-	1A	3	2	-	-	1	3	30	70	-	-	100
BEETC-606T	HSC: Effective Technical Communication	-	-	3A	3	-	-	-	3	3	-	-	50	50	100
BEETC-607I	Mini Project(Internship)	-	-	3A	3	--	-	-	3	3	-	-	25	25	50
BEETC-608A	Audit Course	-	-	-	-	-	-	-	-	-	-	-	-	-	AUDIT
Total		10	6	1T+7A	24	10	3	8	21	150	350	150	100	750	



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Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur

**Electronics and Communication / Electronics & Telecommunication Engineering
/Electronics Engineering**

B.Tech. 6th Semester

Subject: Effective technical Communication (Theory)

Course Code :BEETC606T

CREDITS: 02

Teaching Scheme

Examination Scheme

Lectures: 2 Hours/Week
Hours

Duration of Paper: 02

Tutorial: 1 hour/week

University

Assessment: 35 Marks

College Assessment: 15 Marks

Objective: At the end of the semester, students will have enough confidence to face competitive examinations (IELTES/ TOEFL/CAT/ MAT/ XAT/SNAP/GMAT/GATE etc.) to pursue masters degree. They will also acquire language skills required to write their Reviews/Projects/Reports. They will be able to organize their thoughts in English and hence face job interviews more confidently.

Course Outcomes: After completing the course, the students will be able to

1. acquire knowledge of structure of language.
2. Build vocabulary and face interview process and can become employable.
3. develop business writing skills.
4. Understand technical and scientific writing skills.

Course Structure

Unit1.FunctionalGrammar:
hours)

(6

Common errors, Transformation of Sentences (Change the voice, Change the narration,



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transformation of Simple , Compound, Complex sentences), Use of Phrases, Idioms& Proverbs.

UnitII. English for Competitive Exams & Interview Techniques:

(6hours)

Prefix, Suffix, Word building processes, **English** words /phrases derived from other languages, Technical Jargons, Synonyms/Antonyms, Verbal Analogies, Give one word for, Types &Techniques of Interview

Unit III. Formal Correspondence and Analytical Comprehension

(6hours)

Job applications and Resume Writing, Business Letters,(Enquiry, Quotation, Orders, Complaints), Writing Memorandum, Circulars, notices, e-mail etiquettes, Unseen Comprehension passages

UnitIV. Technical &Scientific Writing:

(6hours)

Features of Technical Writing, Technical Report writing, Writing Manuals, Writing Project and research Proposals, Writing Research papers.

● **Reference Books:**

- EffectivetechnicalCommunicationbyBarunK.Mitra,OxfordUniversityPress,
- *TechnicalCommunication-PrinciplesandPractice*byMeenakshiRaman&Sharma,OxfordUniversityPress,2011, ISBN-13-978-0-19-806529-
- *HowtoPrepareaResearchProposal:GuidelinesforFundingandDissertationsintheSocialandBehavioralSciences*byKrathwohl&RDavid
- *TechnicalWriting-ProcessandProduct*bySharonJ.Gerson&StevenM.Gerson,3rdedition,PearsonEducation Asia, 2000
- *Developing Communication skills* by Krishna Mohan & Meera Banerjee
 - *Functional English* by Dr. P. Mahato and Dr. Dora Thompson, Himalaya Publications



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**B.E. ELECTRONICS & TELECOMMUNICATION / ELECTRONICS & COMMUNICATION ENGINEERING/Electronics Engg.
(SEMESTER – V)**

Code	Subject	Teaching Scheme						Credits				MARKS				Total Marks
		L	P	T/A	Total	L	P	T/A	Total	Theory		Practical				
										Internal	Univ.	Internal	Univ.			
BEETC-501T	Embedded System Design	2	-	1T	3	2	-	1	3	30	70	-	-	-	100	
BEETC-501P	Embedded System Design Lab	-	2	-	2	-	1	-	1	-	-	25	25	-	50	
BEETC-502T	Electromagnetic Waves	3	-	1T	4	3	-	1	4	30	70	-	-	-	100	
BEETC-503T	Digital Signal Processing	3	-	-	3	3	-	-	3	30	70	-	-	-	100	
BEETC-503P	Digital Signal Processing Lab	-	2	-	2	-	1	-	1	-	-	25	25	-	50	
BEETC-504OT	HSC: IEED(Economics)	2	-	1A	3	2	-	1	3	30	70	-	-	-	100	
BEETC-505PE	PEC-I	2	-	1T	3	2	-	1	3	30	70	-	-	-	100	
BEETC-506P	Electronic Workshop II	-	2	-	2	-	1	-	1	-	-	25	25	-	50	
BEETC-507A	Audit Course														AUDIT	
	Total	12	6	3T+1A	22	12	3	4	19	150	350	75	75	75	650	



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Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur

Electronics and Communication/ Electronics & Telecommunication
Engineering/Electronics Engineering
B.Tech.5 th Semester

**Subject: INDUSTRIAL ECONOMICS AND ENTREPRENEURSHIP
DEVELOPMENT.**

Examination Scheme:

Units: 05.

**Marks: Internal - 30
External - 70**

Objective

Study of this subject provides an understanding of the scope of an industrial economics and entrepreneurship development, key areas of business development, sources of finance, project preparation, methods of taxation and tax benefits, significance of entrepreneurship and economic growth, application of engineering skills in entrepreneurial activities etc.

Course Outcomes: After completing the course, students will be able to:

- CO1. Understand different types of business structure.
- CO2. Acquire the knowledge of different market structures and New economic policy
- CO3. Grasp the functions of banks, taxations system and implications of Inflation.
- CO4. Identify various sources of finance
- CO5. Analyse the problems of Small Scale Industries and government's policies for them.

1. Industrial economics, Types of Business structures, top and bottom line of the organization, economic analysis of business, economics of operations, economic prudence in business.
2. Market structures- Monopoly, Oligopoly, and Monopolistic competition. Pricing strategies, business integration- forward backward integration, economies of scale, diseconomies of scale, liberalization, privatization and globalization, Business cycles, optimum size of firm.
3. The functions of central bank and commercial banks, Foreign Direct Investment, Free trade vs. Protectionism, Inflation, Recession, Inclusive growth, Public-Private partnership for development



11

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4. Need – Sources of Finance, Term Loans, Capital Structure, venture capital. Angel funding, Financial Institution, management of working Capital, Break Even Analysis, Taxation – Direct, Indirect Taxes.
5. Sickness in small Business, Major problems faced by SSIs, Foreign Direct Investments and threat to SSI, Technical consultancy organizations, Government Policy for Small Scale Enterprises, tax holidays, and incentives to SSIs.

TEXT BOOKS

- Industrial Economics. By, Ranjana Seth, Ane Book Pvt Ltd.
- Modern Economic Theory By, K.K. Dewett. S.Chand.
- Industrial Economics. By, Jagdish Sheth, Pearson Publication.
- “Entrepreneurial Development” By, S.S.Khanka S.Chand & Co. Ltd. Ram Nagar New Delhi, 1999.
- Hisrich R D and Peters M P, “Entrepreneurship” 5th Edition Tata McGraw-Hill, 2002.
- Management of Entrepreneurship. By, N.V.R. Naidu, I.K. International Pvt Ltd.
- Entrepreneurial Development. By, S.Anil Kumar. New Age International.
- Small- Scale Industries and Entrepreneurship, By, Dr. Vasant Desai, Himalaya Publication.

REFERENCE BOOKS:

- Business Economics. By, K.Rajgopalchar. Atalantic Publishers.
- Microeconomics. By, Robert Pindyk
- Business Economics. By, H.L. Ahuja, H. L. Ahuja, Louis Prof. De Broglie. S.Chand.
- Rabindra N. Kanungo “Entrepreneurship and innovation”, Sage Publications, New Delhi, 1998.
- Financing Small Scale Industries in India, By, K.C.Reddy. Himalaya Publication.




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Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur
Faculty of Engineering & Technology
CIVIL ENGINEERING
Scheme of Examination & Evaluation
Semester: Fifth

Subject Code	Course	Teaching Scheme (Clock Hours/Week)					Credits	Evaluation Scheme					Duration of University Theory Exam (Hrs)				
		Theory hrs/week	Tutorial hrs/week	Practical hrs/week	Total hrs/week	College Assessment (CA)		University Exam	Total Marks	Min. Marks	Internal	External		Total Marks	Min. Marks		
BECVE501T	Structural Analysis -II	3	1		4	20	4			100	40						3
BECVE501P	Structural Analysis -II			2	2		1						25	25	50	25	
BECVE502T	Reinforced Cement Concrete (RCC) Structures	3	1		4	20	4			100	40						4
BECVE502P	Reinforced Cement Concrete (RCC) Structures			2	2		1						25	25	50	25	
BECVE503T	Fluid Mechanics -I	3	1		4	20	4			100	40						3
BECVE503P	Fluid Mechanics -I			2	2		1						25	25	50	25	
BECVE504T	Geotechnical Engineering -II	3	1		4	20	4			100	40						3
BECVE505T	Hydrology & Water Resources (HWR)	4			4	20	4			100	40						3
BECVE506P	Communicative English & Technical Writing			3	3		2						25	25	50	25	
Total		16	4	9	29	100	25	400	500	100	200	200	100	100	200	200	

Note: 1. "Technical Writing" shall consist of detailed report on Summer Training- 1 (ST-1) undertaken after 4th Semester.

2. Equal weightage shall be given to the components of "Communicative English" and "Technical Writing"



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COMMUNICATIVE ENGLISH & TECHNICAL WRITING

BECVE506P
(P-3 Hrs/Week); Total Credits-2

Evaluation Scheme: (25-Internal/25-External)

Outcomes:

Students will be:

1. Adept in using functional grammar
2. Able to write at work
3. Able to draft reports and letters
4. To understand the planning and procedure of carrying out research work
5. Dexterous in presentation skills and participate in GD

Practical 1- Language and style

Grammar, Mechanics, Punctuations, Spellings, Vocabulary & Word Watch (List of Technical and Business terms with usage)

Assignments: 4 Nos. (3 worksheets on Grammar, 1 on Mechanics and Punctuation)

Grammar- Subject and verb agreement, prepositional phrases, pronouns, pronoun references, avoiding shifts, avoiding sexism (avoiding gender bias), modifiers, the clause and simple sentence, compound sentences, transition words, parallelisms.

Mechanics- Fragments, run-ons, and comma splices abbreviations & acronyms.

Punctuations - colons and semicolons, end punctuations, parentheses, dashes, brackets, ellipses, slashes, and hyphens, apostrophes.

Method / plan – Concept clearance using Worksheets with MCQ / activities

Practical 2- Writing at Work & Other Business Writing

Assignments: 4 Nos. (2 topics from A & B each)

A. Writing at Work

Types of Letters (inquiry, order, sales, complaint etc), Memos, E- mail, The Job Search (Resume & Cover letter), Fliers & Brochures.

Method / plan: analyzing errors in mails, resumes, letters and brochures with respect to practical- 1, practice writing with samples given

B. Other Business writing

Itinerary Writing, Inter –office Memorandum (memo), Circulars (Informative, Public, Official), Notice, Agenda and Minutes

Method / plan: analyzing errors in circulars, memos with respect to practical 1, practice writing with samples given as assignment



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Practical 3- Report Strategies

Assignment: 2 Nos. (Any two reports from the given topics)

Reports (Trip / study tour / site visit),
reports, Incident reports, Investigative
Maintenance manual for buildings

Lab reports, Feasibility reports / Recommendation
reports, Technical Proposals, The Summary,

Method / plan: Analyze reports and proposals in the area of your study. Attempt following all the rules in Practical -1 & Practical-5 and give a presentation to your class.

After attending a lecture / meeting / conference, summarize its contents. Provide the speakers name, location of the presentation, date of presentation for the source citation.

Sample for summary

Many textbooks begin or end chapters with summaries. Find such a summary in one of your textbooks. Then read the accompanying chapter. Is the summary effective? If so, why? If not, Why not? If the summary is ineffective, how would you rewrite it?

Practical 4- Orientation to Research

Planning and process, Structure, documentation, composing a bibliography for a research paper /report

Assignments: 3 Nos. (Preparation of a technical paper, Review of 10 technical papers on a particular subject, Study of Detailed Project Report & Preparing a summary)

Method / Plan: Assignments

1. Planning and process,

Structure- Title, authors details, abstract, introduction, discussion, conclusion, footnotes / list of references, Bibliography

Documentation- relevance and purpose, methods and systems available

composing a Bibliography for a research paper /report- placement and arrangement, author, inclusive page numbers, citing an introduction, preface, foreword, or afterword, articles, online journals or website, Check list for a research paper

2. Choosing a Detailed Project Report / Carrying out feasibility study (prepare a summary based on the research)

Sample

Many people are opening their own businesses. What does it take to open your own business? Before you can write an effective business plan and seek financing from a bank, you must research the project.

Choose a new venture, selling or a product or service of your choice. What would it cost to open this business? What would be your best location, or should your business



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be online? What certification or licensing is needed? How many personnel would you need? What equipment is necessary? Who would be your clientele?

Based on research, write a proposal appropriate for presentation to a bank. In this proposal present your business plan for a new entrepreneurial opportunity

Practical 5- Dynamics of Professional Presentations

1. Introduction, planning, occasion, audience, purpose, thesis statement
2. Outlining and structuring, introduction, main body, conclusion
3. Nuances of delivery, modes of delivery, guidelines to effective delivery
4. Visual aids in presentation
5. Organizational GD

Activities : 2 Nos. (A PPT presentation on any one of the Research Project and GD)

Practical 6: Report Writing on Summer Training-1 (ST-1)

Note: Based on the 5 practicals prescribed, many assignments can be prepared and given to the students. Any innovative project and assignment will be highly appreciated.

Proper evidence of the execution of the projects/ Reports / assignments / worksheets should be maintained.

REFERENCE BOOKS:

1. **Technical Writing: Process and Product:** S.J. Gerson and S. M. Gerson, Pearson Education Inc., Singapore (Printed in India by Anand Sons)
2. **Basic Communication Skills for Technology:** A.J. Rutherford, Darling Kindersley(India) Pvt. Ltd, India (Printed in India by Saurabh Printers Pvt. Ltd)
3. **Effective Technical Communication:** Rizvi. M Ashraf, Tata Mc Graw Hills, India
4. **Communication Skills:** Sanjay Kumar and Pushp Lata, Oxford University Press



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Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur
Faculty of Engineering & Technology
Course and Examination Scheme of Bachelor of Engineering (Mechanical Engineering)

VI Semester B.E. (Mechanical Engineering)

Subject Code	Subject	Teaching Scheme			Examination Scheme								
		Hours per week			Duration of Paper (Hrs.)	Max. Marks University Assessment	Max. Marks College Assessment	Total Marks	Min. Passing Marks	Max. Marks University Assessment	Max. Marks College Assessment	Total Marks	Min. Passing Marks
		L	T	P									
BEME601T	Energy Conversion-I	03	01	-	04	03	80	20	100	40	-	-	-
BEME602T	Control Systems Engineering	03	01	-	04	03	80	20	100	40	-	-	-
BEME603T	Operations Research	03	01	-	04	03	80	20	100	40	-	-	-
BEME604T	Mechatronics	03	01	-	04	03	80	20	100	40	-	-	-
BEME604P	Mechatronics	-	-	02	01	-	-	-	-	-	25	25	50
BEME605T	Dynamics of Machines	03	01	-	04	03	80	20	100	40	-	-	-
BEME605P	Dynamics of Machines	-	-	02	01	-	-	-	-	-	25	25	50
BEME606T	Functional English	02	-	-	02	02	40	10	50	20	-	-	-
BEME607P	Computer Applications - II	-	02	02	04	-	-	-	-	-	50	50	100
BEME608P	Industrial Case Study	-	-	02	02	-	-	-	-	-	-	50	50
Total		07	07	08	-	-	440	110	550	-	160	150	250
Semester Total		32			30	800 Marks							

Functional English (BEME606T) subject pertains to Board of Studies in Applied Sciences & Humanities and all the remaining subjects pertain to the Board of Studies in Mechanical Engineering. Mechatronics (BEME604T/P) subject can also be taught by a teacher from Electronics/Instrumentation/Aerotechnologies/relevant disciplines.



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BEME606T

FUNCTIONAL ENGLISH

BEELE607T	FUNCTIONAL ENGLISH	L = 2	T = 0	P = 0	Credits = 2
Examination Scheme	College Assessment	University Examination		Total	Univ. Exam. Duration
	10	40		50	2 Hrs

Syllabus

Total Credits: 02

Teaching Scheme

Theory: 2 hrs per week

Duration of University Examination :2 hrs

Examination Scheme

T (University): 40 marks

T (Internal): 10 marks

Objective: At the end of the semester, students will have enough confidence to face competitive examinations (IELTES/ TOEFL/CAT/ MAT/ XAT/SNAP/GMAT/GATE etc.)to pursue masters degree. They will also acquire language skills required to write their Reviews/Projects/Reports. They will be able to organize their thoughts in English and hence face job interviews more confidently.

Scope: The Curriculum designed is student –centered and it is guidance for their career

Course Structure

Unit I. Functional Grammar:

(4 hours)

Common errors, Transformation of Sentences, Phrases, Idioms & Proverbs.

[50 sentences of common errors, 50 examples of Transformation of Sentences, (5 each type),

50 noun/prepositional phrases, 50 idioms/proverbs]

Unit II. English for Competitive Exams & Interview Techniques:

(6 hours)

IPA (vowel & consonant phonemes), Word building (**English** words /phrases derived from other languages), Technical Jargons, Synonyms/Antonyms, Analogies, Give one word for, Types & Techniques of Interview

Assignment : [25 Words for teaching IPA, 25 words/phrases of foreign origin, 25 technical jargons, 25 words for Synonyms/ Antonyms, 25 words for Analogies, 50 examples of give one word for]

Unit III. Formal Correspondence

(4 hours)

Business Letters, e-mail etiquettes [Orders, Complaints , Enquiries, Job applications and Resume Writing , Writing Memorandum, Circulars, notices]

Unit IV. Analytical comprehension:

(4 hours)

[Four fictional & four non-fictional unseen texts]

Unit V. Technical & Scientific Writing:

(6 hours)

Features of Technical Writing, Writing Scientific Projects, Technical Report writing, Writing Manuals, Writing Project Proposals, Writing Research papers.

Assignment: (Any one project/review as assignment)



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RECOMMENDED BOOKS

• Reference Books:

1. Effective technical Communication by Barun K. Mitra, Oxford University Press,
2. *Technical Communication-Principles and Practice* by Meenakshi Raman & Sharma, Oxford University Press, 2011, ISBN-13-978-0-19-806529-
3. *The Cambridge Encyclopedia of the English Language* by David Crystal , Cambridge University Press
4. *Contemporary Business Communication* by Scot Ober , Published by Biztantra,
5. *BCOM- A South-Asian Perspective* by C.Lehman, D. DuFrene & M. Sinha, Cenage Learning Pvt. Ltd.2012
6. *Business English*, by Dept of English, University of Delhi, Published by Dorling Kindersley (India), Pvt .Ltd.,2009, ISBN 978 81 317 2077 6
7. *How to Prepare a Research Proposal: Guidelines for Funding and Dissertations in the Social and Behavioral Sciences* by Krathwohl & R David
8. *Technical Writing- Process and Product* by Sharon J. Gerson & Steven M. Gerson, 3rd edition, Pearson Education Asia, 2000
9. *Developing Communication skills* by Krishna Mohan & Meera Banerjee

EVALUATION PATTERN:

Internal Examination: Weightage = 10 marks

Written Examination: 05 marks

Project Seminar : 05 marks

External Examination: Weightage = 40 marks

Question pattern for end semester examination

Unit No	Q. No	Question type	No. of Questions	Weightage
Unit 1	1(A)	objective	3 out of 5	3+3+4=10
	1(B)	objective	3 out of 5	
	1(C)	objective	4 out of 6	
Unit 2	2 (A)	objective	3 out of 5	3+3+4=10
	2(B)	objective	3 out of 5	
	2(C)	subjective	1 (no choice)	
Unit 3 &	3 (A)	Subjective	1 set (out of 2 sets)	5
Unit4	3(B)	subjective	1(no choice)	5
Unit 5	4(A)	subjective	1 out of 2	5
	4(B)	subjective	1 out of 2	5



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BEME406T: ENVIRONMENTAL STUDIES (Theory)

CREDITS: Nil (College Assessment in Grades)

Teaching Scheme

Lectures: 3 Hours/Week

Examination Scheme

College Assessment: Grades
(Grades: O, A, B, C)

Course Objectives and Expected Outcomes: This course provides an integrated and interdisciplinary approach to the study of environment and solutions to environmental problems. This course will spread awareness among the students about environmental issues and shall alert them to find solutions for sustainable development.

UNIT – I

[6 Hrs.]

Introduction:

Definition, scope and importance; Need for public awareness -Institutions in environment, people in environment.

Natural Resources:

Renewable and non-renewable and associated problems; Role of an individual in conservation of natural resources; equitable use of resources for sustainable lifestyles.

UNIT – II

[6 Hrs.]

Ecosystems:

Concept of an ecosystem - understanding ecosystems, ecosystem degradation, resource utilization, Structure and functions of an ecosystem- (producers, consumers) and decomposers.

Energy flow in the ecosystem - water, carbon, oxygen, nitrogen; and energy cycles, integration of cycles in nature.

Ecological succession; Food chains, food webs and ecological pyramids; Ecosystem types - characteristic features, structure, and functions of forest, grassland, desert and aquatic ecosystems.

UNIT – III

[6 Hrs.]

Bio-diversity:

Introduction - biodiversity; at genetic, species and ecosystem levels Bio-geographic classification of India.

Value of biodiversity - Consumptive use value, productive use value, social, ethical, moral, aesthetic and optional value of biodiversity.

India as a mega-diversity nation; hotspots of biodiversity

Threats to bio-diversity - habitat loss, poaching of wildlife, man-wild life conflicts. Common endangered and endemic plant and animal species of India. Insitu and Exsitu conservation of biodiversity




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UNIT – IV

[6 Hrs.]

Pollution :

Definition; Causes, effects and control measures of air, water, soil, marine, noise and thermal pollutions and nuclear hazards.

Solid waste management - Causes, effects and control measures of urban and industrial waste. Role of individual and institutions in prevention of pollution.

Disaster management Floods, Earth quacks, Cyclone and land slides.

UNIT – V

[6 Hrs.]

Social Issues and the Environment:

Unsustainable to sustainable development; Urban problems, related to energy; Water conservation, rainwater harvesting, watershed management; Problems and concerns of resettlement and rehabilitation of affected people.

Environmental ethics - issues and possible solutions – Resource consumption patterns and need for equitable utilization; Equity disparity in Western and Eastern countries; Urban and rural equity issues; need for gender-equity.

Preserving Resources for future generations. The rights of animals; Ethical basis of environment education and awareness; Conservation ethics and traditional value systems of India.

Climate change, global warming, acid-, rain, Ozone layer depletion, nuclear accidents and holocausts. Wasteland Reclamation; Consumerism and Waste products.

Environment legislations - The Environment (protection) Act; The water (Prevention and Control of Pollution) Act; The Wildlife Protection Act; Forest Conservation Act; Issues involved in enforcement of environmental legislations - environment impact assessment (EIA), Citizens actions and action groups.

Public awareness — Using an environmental calendar of activities, self initiation.

UNIT – VI

[6 Hrs.]

Human Population and the Environment:

Global population growth, variation among nations, population explosion; Family Welfare Programmes.- methods of. sterilization; Urbanization.

Environment and human health - Climate and health, Infectious diseases, water-related diseases, risk due to chemicals in food, Cancer and environment.

Human rights — Equity, Nutrition and health rights, intellectual property rights (IPRS), Community Biodiversity registers (CBRs).

Value education - environmental values, valuing nature, valuing cultures, social justice, human heritage, equitable use of resources, common property resources, ecological degradation.

HIY/AIDS; Women and Child Welfare; Information technology in environment and human health.



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Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur
Faculty of Engineering & Technology
Course and Examination Scheme of Bachelor of Engineering (Mechanical Engineering)

VIII Semester B.E. (Mechanical Engineering)

Subject Code	Subject	Teaching Scheme			Examination Scheme									
		Hours per week			No. of Credits	Theory				Practical				
		L	T	P		Duration of Paper (Hrs.)	Max. Marks University Assessment	Max. Marks College Assessment	Total Marks	Min. Passing Marks	Max. Marks University Assessment	Max. Marks College Assessment	Total Marks	Min. Passing Marks
BEME801T	Industrial Management	03	01	-	04	03	80	20	100	40	-	-	-	-
BEME802T	Elective – II	03	01	-	04	03	80	20	100	40	-	-	-	-
BEME802P	Elective – II	-	-	02	01	-	-	-	-	-	25	25	50	25
BEME803T	Elective – III	03	01	-	04	03	80	20	100	40	-	-	-	-
BEME804T	Automation in Production	03	01	-	04	03	80	20	100	40	-	-	-	-
BEME804P	Automation in Production	-	-	02	01	-	-	-	-	-	25	25	50	25
BEME805T	Energy Conversion - III	03	01	-	04	03	80	20	100	40	-	-	-	-
BEME805P	Energy Conversion - III	-	-	02	01	-	-	-	-	-	25	25	50	25
BEME806P	Project	-	-	06	06	-	-	-	-	-	75	75	150	75
Total		15	05	12	29	-	400	100	500	-	150	150	300	-
Semester Total		32			29	800 Marks								

Elective – II (BEME802T, BEME802P):

BEME802T1/P1: Finite Element Method
 BEME802T4/P4: Management Information Systems

BEME802T2/P2: Computer Integrated Manufacturing
 BEME802T5/P5: Refrigeration & Air-Conditioning

BEME802T3/P3: Industrial Fluid Power
 BEME802T6/P6: Stress Analysis

Elective – III (BEME803T):

BEME803T1: Advanced Manufacturing Techniques
 BEME803T4: Mechanical Vibrations

BEME803T2: Machine Tool Design
 BEME803T5: Advance I.C. Engine

BEME803T3: Renewable Energy Systems
 BEME803T6: Tribology



All subjects pertain to Board of Studies in Mechanical Engineering.

BEME805T: ENERGY CONVERSION - III (Theory)

CREDITS: 04

Teaching Scheme

Lectures: 3 Hours/Week

Tutorial: 1 Hour/Week

Examination Scheme

Duration of Paper: 03 Hours

University Assessment: 80 Marks

College Assessment: 20 Marks

Course Objectives and Expected Outcomes : This course includes the current energy scenario, various energy conservation techniques, energy auditing, study of various non conventional energy sources and their significance in present energy crises.. This subject also helps the students in understanding various Hydraulics and Pneumatic techniques used in various applications & industries.

UNIT – I

[8 Hrs.]

Gas Turbines:-Ideal cycles isentropic and small stage efficiency, application of gas turbine pressure losses, effect of intercooling, reheat & regeneration, fuel-air ratio, combustion efficiency, performance calculation, open cycle & closed cycle gas turbine plants cogenerations & combined power cycles.

UNIT – II

[8 Hrs.]

Principles & working of turbojet, turboprop, Ramjet & pulse jet, simple turbojet cycle, thrust power, propulsive power. Thermal efficiency, propulsive efficiency, overall efficiency.

Nuclear Power Plant: Introduction, nuclear reactor, classification, general components, operation, problems of reactor operation, site selection, comparison of nuclear plants with thermal plants. (analytical treatment is not expected)

UNIT – III

[8 Hrs.]

Principle of solar energy collection, solar energy and sources of power generation, solar constant, solar geometry, flat plate & concentrating collectors for water and air heating, solar energy storage, solar pond, application of solar energy for cooking, drying, solar photovoltaic system & its applications. Introduction to fuel cell. Working of wind generators & MHD generator (theoretical treatment is expected)

UNIT – IV

[8 Hrs.]

Energy Auditing: Introduction, global and Indian energy scenario, need of importance of energy conversion. importance of energy audit, uses of energy audit, basic terms of energy audit, types of energy audit, procedure for carrying energy audit, instruments used for energy audit such as power analyzer, multipoint heat flow meter, Lux meter, portable infrared radiation thermometer, thermocouple based temperature indicator. Payback period, Return on Investment (ROI), life cycle costs, Sankey diagram, specific energy consumption.

UNIT – V

[8 Hrs.]

Hydraulic systems: Introduction, essential elements of a hydraulic system: Flow actuators, directional control valves, pressure control valves, flow control valves, accumulators, basic hydraulic circuit, meter in & meter out circuits. Use of single, double actuator, crane, jacks. Grinding machine.



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UNIT – VI

[8 Hrs.]

Pneumatic Systems : Principle of pneumatics, comparison with hydraulic power transmission. Study of various Compressors used in pneumatic system, air preparatory unit, pneumatic valve. Various Pneumatic circuits.

LIST OF TUTORIALS: Tutorials based on above syllabus.

TEXT BOOKS:

1. Non-Conventional Energy Storage, Rai G.D., Khanna Ppublication.
2. Solar Energy Principles of Thermal Collection and Storage, Sukhatme, S.P., Tata McGraw Hill.
3. Industrial Hydraulics, John J. Pippenger, Tata McGraw Hill.
4. Pneumatic Systems, S. R. Mujumdar, Tata McGraw Hill.
5. Energy Conservation - related booklets published by National Productivity Council (NPC) & Petroleum Conservation Research Association.(PCRA).
6. Efficient Use of Electricity in Industries, B.G. Desai, M.D. Parmar, R. Paraman and B.S. Vaidya, ECQ series Devki R & D. Engineers, Vadodara.
7. Thermal Engineering, P.L. Ballaney, Khanna publishers.
8. Gas Turbine& Jet Propulsion, Dubey & Khajuriya, Dhanpat Rai & Sons.

REFERENCE BOOKS:

1. Solar Energy Fundamentals and Applications, Garg, H.P., Prakash J., Tata McGraw Hill.
2. Gas Turbine Theory, Cohen and Rogers, Pearson.



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BEME307P: TECHNICAL REPORT & SEMINAR

CREDITS: 02

Teaching Scheme

Practical: 02 Hour/Week

Examination Scheme

College Assessment: 50 Marks

Course Objectives and Expected Outcomes: To inculcate the habit of independent learning among students, this course includes identification of a technical topic beyond curriculum, collection of existing literature and report preparation with seminar delivery. Students will be able to familiarize themselves with new technical topics and can participate in technical seminars and paper contests.

Technical report & Seminar shall be based on any relevant technical topic with independent topic for each student. Report shall be based on information collected from Books, Handbooks, Journals, Periodicals, Internet etc. Student is expected to submit the report and shall give a presentation on it.

A teacher shall be allotted for each batch (Max 09 & Min. 05 Students) and the workload shall be 1 hour per batch per week.




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RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR
FOUR YEAR BACHELOR OF ENGINEERING (B.E.) DEGREE COURSE

SEMESTER: 3rd (C.B.C.S.)

BRANCH: COMPUTER ENGINEERING

Subject : *Universal Human Values*

Subject Code : BECME306T

Load	Credits	College Assessment Marks	University Evaluation	Total Marks
2 Hrs	2	15	35	50

Aim: To inculcate sensitivity among students towards themselves and their surrounding including family, society and nature

Prerequisite(s): Values education from school.

Course Objectives:- The objective of the course is four fold:

1	Development of a holistic perspective based on self-exploration, about themselves (human being), family, society and nature/existence.
2	Understanding (or developing clarity) of the harmony in the human being, family, society and nature/existence
3	Strengthening of self-reflection.
4	Development of commitment and courage to act.

Course Outcomes:

By the end of the course students shall be able to

CO1	Expected to become more aware of themselves, and their surroundings (family, society, nature)
CO2	Become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind.
CO3	Handle better critical ability.
CO4	Become sensitive to their commitment towards what they have understood (human values, human relationship and human society).




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Unit 1**[06 Hours]**

Value education, definition, need for value education. The content and the process of value education, basic guidelines for value education, self-exploration as a means of value education, happiness and prosperity as part of value education.

Unit 2**[06 Hours]**

Harmony of self with body, coexistence of self and body, understanding the needs of self and the needs of body, understanding the activities in the self and the activities in the body.

Unit 3**[06 Hours]**

Values in relationship, the five dimensions of human endeavour, the holistic perception of harmony in existence.

Unit 4**[06 Hours]**

Basics for ethical human conduct, defects in ethical human conduct, human rights violations and social disparities, value based life.

Reference Books

1. *Human Values and Professional Ethics* by R R Gaur, R Sangal, G P Bagaria, ExcelBooks, New Delhi, 2010
2. *Jeevan Vidya: Ek Parichaya*, A Nagaraj, Jeevan Vidya Prakashan, Amarkantak, 1999.
3. *Human Values*, A.N. Tripathi, New Age Intl. Publishers, New Delhi, 2004.
4. *Indian Ethos and Modern Management: Amalgam of the best of the ideas from the East and the West*, B.L. Bajpai, New Royal Book Bo., Lucknow, 2004
5. *Human society in ethics and politics*, Bertrand Russel, Routledge Publications, 2009




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FOUR YEAR BACHELOR OF ENGINEERING (B. E.) DEGREE COURSE
SEMESTER: FIFTH
BRANCH: COMPUTER ENGINEERING

Sr. No.	Subject Code	Subjects	Workload				Credit			Marks					
			L	P	T	Total Hrs/Wk	L	P	T	Total	Theory		Practical		
											Sess.	Univ.	Sess.	Univ.	
1	BECME501T	Theory of Computation	4	-	1	5	4	-	1	5	20	80	-	-	100
2	BECME502T	Computer Architecture Organization	4	-	1	5	4	-	1	5	20	80	-	-	100
3	BECME503T	TCP/IP and Internet	4	-	1	5	4	-	1	5	20	80	-	-	100
4	BECME503P	TCP/IP and Internet Lab	-	2	-	2	-	1	-	1	-	-	25	25	50
5	BECME504T	Computer Graphics	4	-	1	5	4	-	1	5	20	80	-	-	100
6	BECME504P	Computer Graphics Lab	-	2	-	2	-	1	-	1	-	-	25	25	50
7	BECME505T	Industrial Economics and Entrepreneurship Development	4	-	-	4	4	-	-	4	20	80	-	-	100
8	BECME506P	Computer Lab -III	-	2	-	2	-	2	-	2	-	-	25	25	50
		Total	20	6	4	30	20	4	4	28	100	400	75	75	650



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R.T.M.N.U Nagpur
Syllabus of B. E 5th Semester Computer Engineering

BECME505T Industrial Economics and Entrepreneurship Development

Sr. No.	Subject Code	Subject	Workload				Credit				Marks				Total Marks
			Lecture	Practical	Tutorial	Total Hrs/Week	Lecture	Practical	Tutorial	Total	Theory		Practical		
											Sessional	University	Sessional	University	
1	BECME505T	Industrial Economics and Entrepreneurship Development	4	-	-	4	4	-	-	4	20	80	-	-	100

Syllabus:

Unit I :

Industrial economics, Types of Business structures, top and bottom line of the organization, economic analysis of business, economics of operations, economic prudence in business.

Unit II:

Market structures- Monopoly, Oligopoly, and Monopolistic competition. Pricing strategies, business integration-forward backward integration, economies of scale, diseconomies of scale, liberalization, privatization and globalization. Business cycles, optimum size of firm.

Unit III:

The functions of central bank and commercial banks, Foreign Direct Investment, Free trade vs. Protectionism, Capital formation, Inflation, Recession and stagnation, Inclusive growth, Public-Private partnership for development, Multiplier effect, Accelerator effect.

Unit IV:

Entrepreneurship meaning, Major Motives Influencing an Entrepreneur, Factors Affecting Entrepreneurial Growth. Project Formulation, Product development, Market Survey and Research, Demand forecasting techniques, Techno Economic Feasibility Assessment – Preparation of Preliminary Project Reports – Project Appraisal – Sources of Information – Classification of Needs and Agencies.

Unit V:

Need – Sources of Finance, Term Loans, Capital Structure, venture capital. Angel funding, Financial Institution, management of working Capital, Costing, Break Even Analysis, Network Analysis Techniques of PERT/CPM – Taxation – Direct, Indirect Taxes.

Unit VI:

Sickness in small business, Major problems faced by SSIs, Foreign Direct Investments and threat to SSI, Technical consultancy organizations, safeguard measures against variation in currency value, Government Policy for Small Scale Enterprises, tax holidays, and incentives to SSIs.

TEXT BOOKS

1. Industrial Economics. By, Ranjana Seth, Ane Book Pvt Ltd.



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R.T.M.N.U Nagpur
Syllabus of B. E 5th Semester Computer Engineering

2. Modern Economic Theory By, K.K. Dewett. S.Chand.
3. Industrial Economics. By, Jagdish Sheth, Pearson Publication.
4. "Entrepreneurial Development" By, S.S.Khanka S.Chand & Co. Ltd. Ram Nagar New Delhi, 1999.
5. Hisrich R D and Peters M P, "Entrepreneurship" 5th Edition Tata McGraw-Hill, 2002.
6. Management of Entrepreneurship. By, N.V.R. Naidu, I.K. International Pvt Ltd.
7. Entrepreneurial Development. By, S.Anil Kumar. New Age International.
8. Small- Scale Industries and Entrepreneurship, By, Dr. Vasant Desai, Himalaya Publication.

REFERENCE BOOKS:

1. Business Economics. By, K.Rajgopalchar. Atalantic Publishers.
2. Microeconomics. By, Robert Pindyk
3. Business Economics. By, H.L. Ahuja,H. L. Ahuja,Louis Prof. De Broglie. S.Chand.
4. Rabindra N. Kanungo "Entrepreneurship and innovation", Sage Publications, New Delhi, 1998.
5. Financing Small Scale Industries in India, By, K.C.Reddy.Himalaya Publication.



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FOUR YEAR BACHELOR OF ENGINEERING (B. E.) DEGREE COURSE
SEMESTER: SIXTH
BRANCH: COMPUTER ENGINEERING

Sr. No.	Subject Code	Subjects	Workload				Credit			Marks					
			L	P	T	Total Hrs/W week	L	P	T	Total	Theory		Practical		
											Sess.	Univ.	Sess.	Univ.	
1	BECME601T	System Software	4	-	1	5	4	-	1	5	20	80	-	-	100
2	BECME602T	Design and Analysis of Algorithms	4	-	1	5	4	-	1	5	20	80	-	-	100
3	BECME602P	Design and Analysis of Algorithms Lab	-	2	-	2	-	1	-	1	-	-	25	25	50
4	BECME603T	Database Management System	4	-	1	5	4	-	1	5	20	80	-	-	100
5	BECME603P	Database Management System Lab	-	2	-	2	-	1	-	1	-	-	25	25	50
6	BECME604T	Software Engineering & Project Management	3	-	1	4	3	-	1	4	20	80	-	-	100
7	BECME604P	Software Engineering & Project Management Lab	-	2	-	2	-	1	-	1	-	-	25	25	50
8	BECME605T	Functional English	2	-	1	3	2	-	1	3	10	40	-	-	50
9	BECME606P	Mini Project & Industrial Visit	-	2	-	2	-	2	-	2	-	-	25	25	50
		Total	17	8	5	30	17	5	5	27	90	360	100	100	650



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R.T.M.N.U Nagpur
Syllabus of B.E 6th Semester Computer Engineering

BECME605T

Functional English

Sr. No.	Subject Code	Subject	Workload				Credit				Marks				
			Lecture	Practical	Tutorial	Total Hrs/Week	Lecture	Practical	Tutorial	Total	Theory		Practical		Total Marks
											Sessional	University	Sessional	University	
1	BECME605T	Functional English	2	-	1	3	2	-	1	3	10	40	-	-	50

Syllabus:

Unit 1. Functional Grammar: (4 Hours) (3+3+4=10)

Common errors, Transformation of Sentences, Phrases, Idioms & Proverbs. [50 sentences of common errors, 50 examples of Transformation of Sentences, (5 each type), 50 noun/prepositional phrases, 50 idioms/proverbs]

Unit II. English for Competitive Exams & Interview Techniques: (6 Hours) (3+3+4=10)

IPA (vowel & consonant phonemes), Word building [English words /phrases derived from other languages), Technical Jargons, Synonyms/Antonyms, Analogies, Give one word for, Types & Techniques of Interview Assignment :[25 Words for teaching IPA, 25 words/phrases of foreign origin, 25 technical jargons, 25 words for Synonyms/ Antonyms, 25 words for Analogies, 50 examples of give one word for]

Unit III

(A) Formal Correspondence (4 Hours) (5X2=10)

Business Letters, Technical Report Writing, Writing Resumes, e-mail etiquettes
[Orders, Complaints, Enquiries, Job applications & Resume Writing, Writing Memoranda]

(B) Analytical comprehension: (4 Hours)

[Four fictional & four non-fictional unseen texts]

Unit IV. Technical & Scientific Writing: (4 Hours) (5X2=10)

Writing Reviews, Features of Technical Writing, Writing Scientific Projects, Writing Research papers. Assignment: (Any one project/review as assignment)

Total number of periods required = 22 for each Branch of Engineering



Page 13 of 15

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Reference Books:

1. Effective technical Communication by Barun K. Mitra, Oxford University Press,
2. *Technical Communication-Principles and Practice* by Meenakshi Raman & Sharma, Oxford University Press, 2011, ISBN-13-978-0-19-806529-
3. *The Cambridge Encyclopedia of the English Language* by David Crystal , Cambridge University Press
4. *Contemporary Business Communication* by Scot Ober , Published by Biztantra,
5. *BCOM- A South-Asian Perspective* by C.Lehman, D. DuFrene & M. Sinha, Cenage Learning Pvt. Ltd.2012
6. *Business English*, by Dept of English, University of Delhi, Published by Dorling Kindersley (India), Pvt .Ltd.,2009, ISBN 978 81 317 2077 6
7. *How to Prepare a Research Proposal: Guidelines for Funding and Dissertations in the Social and Behavioral Sciences* by Krathwohl & R David
8. *Technical Writing- Process and Product* by Sharon J. Gerson & Steven M. Gerson, 3rd edition, Pearson Education Asia, 2000
9. *Developing Communication skills* by Krishna Mohan & Meera Banerjee

EVALUATION PATTERN:

Internal Examination: Weightage = 10 marks

Written Examination: 05 marks

Project Seminar : 05 marks

External Examination: Weightage = 40 marks

Question pattern for end semester examination

Unit No	Q. No	Question type	No. of Questions	Weightage
Unit 1	1(A)	objective	3 out of 5	3+3+4=10
	1(B)	objective	3 out of 5	
	1(C)	objective	4 out of 6	
Unit 2	2 (A)	objective	3 out of 5	3+3+4=10
	2(B)	objective	3 out of 5	
	2(C)	subjective	1 (no choice)	
Unit 3 &	3 (A)	Subjective	1 set (out of 2 sets)	5
Unit4	3(B)	subjective	1(no choice)	5
Unit 5	4(A)	subjective	1 out of 2	5
	4(B)	subjective	1 out of 2	5




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Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur
FOUR YEAR B. TECH. COURSE
(Revised Curriculum as per AICTE Model Curriculum)
Scheme for Computer Engineering

Fifth Semester:-

S. N.	Subject Code	Subject	Teaching Scheme			Evaluation Scheme			Credits	Category
			L	T	P	CA	UE	Total		
1	BTCME501T	Database Management System	3	1	-	30	70	100	4	PCC-CS
2	BTCME501P	Database Management System - Lab	-	-	2	25	25	50	1	PCC-CS
3	BTCME502T	Computer Graphics	3	-	-	30	70	100	3	PCC-CS
4	BTCME502P	Computer Graphics -Lab	-	-	2	25	25	50	1	PCC-CS
5	BTCME503T	Java Programming	3	-	-	30	70	100	3	PCC-CS
6	BTCME503P	Java Programming - Lab	-	-	2	25	25	50	1	PCC-CS
7	BTCME504T	Elective-I	3	-	-	30	70	100	3	PEC-CS
8	BTCME505T	Humanities - II - Effective Technical Communication	2	1	-	15	35	50	3	HSMC
9	BTCME506T	Yoga & Meditation	-	-	2	-	-	-	Audit	MC
Total			16	02	06	210	390	600	19	

Elective-I:

BTCME504.1T - Microcontrollers & Applications,

BTCME504.2T - Artificial Intelligence,

BTCME504.3T - Software Engineering

Dr. (Lab) Sushil S. Gokul



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(Dr. A. N. Thakare)

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(Prof. V. P. Thakare)

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(Prof. S. S. Dute)

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Subject: **Effective Technical Communication**

Subject Code: **BTCME505T**

Load	Credits	College Assessment Marks	University Evaluation	Total Marks
(3 Hrs. +1Hr.) (L+ T)	3	15	35	50

Aim: To develop a confidence and communication skills among students in order to face the interviews confidently.

Prerequisite(s): None

Course Objectives: (02-04)

At the end of the semester,

1	Students will have enough confidence to face competitive examinations (IELTES/ TOEFL/CAT/ MAT/ XAT/SNAP/GMAT/GATE etc.)
2	They will also acquire language skills required to write their Reviews / Projects / Reports.
3	They will be able to organize their thoughts in English and hence face job interviews more confidently.

Course Outcomes: (06)

After completing the course, students will

CO1	Acquire knowledge of structure of language.
CO2	Be able to face competitive exams and the interview process and can become employable.
CO3	Develop business writing skills.
CO4	Become familiar with technology enabled communication and can develop technical and scientific writing skills.

Syllabus

Unit I. Functional Grammar: [7Hrs]

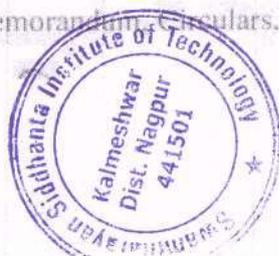
Common errors, Transformation of Sentences- Change the Voice, Change the Narration, Simple, Compound Complex sentences, Use of Phrases, Idioms & Proverbs.

Unit II. English for Competitive Exams & Interview Techniques: [5 Hrs]

Word building, **English** words /phrases derived from other languages, Prefixes and Suffixes, Synonyms/Antonyms, Technical Jargons, Verbal Analogies, Give one word for, Types & Techniques of Interview.

Unit III. Formal Correspondence [5 Hrs]

Business Letters, (Enquiry, Quotation, Order, Complaint), Job applications and Resume Writing, e-mail etiquette, Writing Memorandum, Circulars, notices, Analytical comprehension



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Unit IV. Technical & Scientific Writing:

[7 Hrs]

Features of Technical Writing. Technical Report writing (Accident, Feasibility, Trouble, Progress).
Writing Scientific Projects. Writing Manuals. Writing Project Proposals. Writing Research papers.

Reference Books:

1. Effective technical Communication by Barun K. Mitra, Oxford University Press.
2. Technical Communication-Principles and Practice by Meenakshi Raman & Sharma, Oxford University Press, 2010.
3. Functional English for Technical Students by Dr. Pratibha Mahato and Dr. Dora Thompson, Himalaya Publishing House
4. How to Prepare a Research Proposal: Guidelines for Funding and Dissertations in the Social and Behavioral Sciences by Krathwohl & R David
5. Technical Writing- Process and Product by Sharon J. Gerson & Steven M. Gerson, 3rd edition, Pearson Education Asia, 2000
6. Developing Communication skills by Krishna Mohan & Meera Banerjee.

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SCHEME OF EXAMINATION & EVALUATION
B. TECH CIVIL ENGINEERING (CHOICE BASED CREDIT SYSTEM)
SEMESTER: FIFTH

Sr. No	Subject Code	Subject	Workload in Hours					Credit			Marks						Minimum passing marks	
			L	T/A	P	L	T	P	Total	Theory		Practical		Total	Theory	Practical		
										Int	Uni	Int	Uni					
1	BTCVE501T	Hydraulic Engineering	3	0	0	3	0	0	0	3	30	70	--	--	100	45	--	
2	BTCVE501P	Hydraulic Engineering (Practical)	0	0	2	0	0	1	1	--	--	25	25	50	--	25	--	
3	BTCVE502T	Reinforced Cement Concrete (RCC) designs	3	1	0	3	1	0	4	30	70	--	--	100	45	--		
4	BTCVE503T	Civil Engineering Materials, Testing & Evaluation	3	0	0	3	0	0	3	30	70	--	--	100	45	--		
5	BTCVE503P	Civil Engineering Materials, Testing & Evaluation (Practical)	0	0	2	0	0	1	1	--	--	25	25	50	--	25	--	
6	BTCVE504T	Professional Practice, Law & Ethics	3	0	0	3	0	0	3	30	70	--	--	100	45	--		
7	BTCVE505T	Elective-I	3	0	0	3	0	0	3	30	70	--	--	100	45	--		
8	BTCVE506T	Elective-II	3	0	0	3	0	0	3	30	70	--	--	100	45	--		
9	BTCVE507P	Industrial Training (Already done in summer vacation after 4 th sem) & Professional Skill Training (Software Applications in Civil Engineering)	0	0	2	0	0	1	1	--	--	50	50	100	--	50	--	
10	BTCVE508AU	Organizational Behavior	2	0	0	0	0	0	0	--	--	50	Audit	50	--	--	--	
TOTAL			20	1	6	18	1	3	22	180	420	150	100	850				

• L- Lecture , P-Practical, T- Tutorial , A- Activity (Half Credit per Hour)



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(Signature)
Dr. Avinash N. Shrinikhande,
BOS (CIVIL Engg) Chairman

(Signature)
Dr. A.N. Dalshade,
BOS Member

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FACULTY OF SCIENCE & TECHNOLOGY
B. TECH CIVIL ENGINEERING (CHOICE BASED CREDIT SYSTEM)

Sem: V	Total Hours Distribution per week		
Total Credit: 3	Lecture (L): 03 Hrs	Tutorial/Activity (T/A): 0 Hrs.	Practical (P): 0 Hrs.
Subject Code	BTCVE506T	Name of Subject: Climate Change and its Mitigation (Elective-II)	
Examination Scheme			
Internal Marks:		Marks:	Minimum Passing Marks:
30 Marks (15 Marks for sessional examination) (15 Marks for Activity based)		70 Marks	45 Marks
			Examination Duration: 3 Hours

Course Objective	
1	Students should be able to get knowledge about Climate system, its changes and causes
2	Students should be able to learn about Green house gases and its chemistry, sources, effects & instruments used for quantification
3	Students should be able to learn about the impacts of global climate change
4	Provide the knowledge of clean technology and alternate energy sources
5	To introduce the students about the mitigation of climate change

Course Outcome	
After completion of syllabus student able to	
1	To be able to understand the problem of economics of energy – environmental interaction with respect to global climate change
2	To be in a position to analysis Green house effect
3	To be in a position to analyze impact of climate change
4	To be in a position to understand the clean technology and alternate energy sources
5	To demonstrate in producing research/project report on mitigation strategies for global climate change.



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MAPPING OF CO WITH PO

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	2	1	-	-	-	1	1	2	2
CO2	2	2	2	2	1	-	-	-	1	2	2	2
CO3	2	2	2	1	1	-	-	-	1	1	2	2
CO4	2	2	2	1	1	-	-	-	1	2	2	2
CO5	2	2	2	1	1	-	-	-	1	1	2	2
AVG	2	2	2	1.4	1	-	-	-	1	1.4	2	2

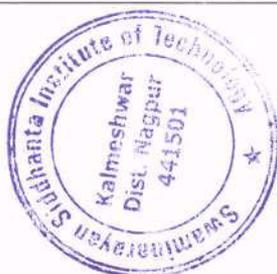
1 Low

2 Medium

3 High

SYLLABUS

Unit No.1 Earth's Climate System			
Details of Topic	Allotment of Hours		Mapped with CO Number
	L	T/A	CO
Introduction to Climate Change; History and Trends of Climate	02		1
Atmosphere – weather and Climate	01		
Causes of global and regional climate change	01		
climate parameters – Temperature, Rainfall, Humidity	01		
Wind – Global ocean circulation and its effect	01		
Carbon cycle	01		
	07		
Unit No.2 Greenhouse Gases			
Details of Topic	Allotment of Hours		Mapped with CO Number
	L	T/A	CO
Introduction and effect of Carbon dioxide, methane, nitrous oxide, water vapor, ozone and chlorofluorocarbons	02		2
Chemistry of greenhouse gases	01		
Sources and sinks, their cycle in atmosphere	01		
Radiative forcing	01		
Effects on plants and animals	01		
instruments used for quantification	01		
	07		




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Unit No.3 Impacts of Global Climate Change			
Details of Topic	Allotment of Hours		Mapped with CO Number CO
	L	T/A	
Impacts of Climate Change on various sectors – Agriculture, Forestry	02		3
Methods and Scenarios, changes in agricultural production	02		
Impact on Human Health, Industry and society	01		
Spread of epidemics and Risk of Irreversible Changes.	01		
Traditional practices to cope with climate change impacts	01		
	07		
Unit No.4 Waste to Energy, Clean Technologies and Greener Fuels			
Details of Topic :	Allotment of Hours		Mapped with CO Number CO
	L	T/A	
Introduction to MSW & Bio waste, Biomedical, Industrial waste, International and Regional cooperation.	02		4
Alternate Energy: Hydrogen, CBS, Bio-fuels, Solar Energy, Wind, Hydroelectric Power	02		
Examples of future Clean Technologies, Biodiesel, Natural Compost, Eco- Friendly Plastic	02		
Study of waste to energy projects	01		
	07		
Unit No.5 Climate Change Mitigation			
Details of Topic	Allotment of Hours		Mapped with CO Number CO
	L	T/A	
Climate change response measures: definition and evolution..	02		5
Introduction to mitigation of GHGs and stabilization scenario	01		
characteristics of mitigation in regional and national context	01		
mainstreaming climate change in development agenda	01		
short-term mitigation options Role of fossil fuels in climate change	01		
Role of Governments, industries, and individuals	01		
	07		

References							
Applicable for Unit No.	Name of Book	Name of Author	Name of Publisher	Edition	Category		
					Text Book	Research paper	Reference book
1	Essentials of the Earth's Climate System	Roger G. Barry & Eileen A. Hall-McKim	Cambridge University Press	1st	Text Book		
2,3	Climate Change and Greenhouse	Pratap Bhattacharya(Author),S	CRC Press	1st	Text Book		




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	Gases Emissions	ushmitaMun da&Pradeep Kumar Dash					
2,3,4	Global Climate Change	Suruchi Singh, Pardeep Singh, S. Rangabhashyam, K.K. Srivastava	Elsevier	1st	Text Book		
1,2,3	Implementing the climate regime	Jon Hovi, Olav Stokke and GeirUlfstein	International compliance, Earthscan	2005	Text Book		
5	Energy Systems and Sustainability: Power for a Sustainable Future	G Boylr, B Everest, J Ramage	Oxford	2003	Text Book		
6	Climate change and it's control	Dr. R.N.Patil, Dr. R.M. Dhoble, Dr. A. M. Bhamburkar	Book Rivers Publication ISBN: 978-93-5515-329-6	2022	Text Book		

List of Code/Handbook			
Applicable for Unit No.	Title of Code	Type of code	Year of Publication
1,2	Climate change and carbon markets : a handbook of emission reduction mechanisms, Earthscan by F. Yamin		2005.
1,2,3,4	Handbook of Climate Change and India by Navroz K. Dubash		2011
2,3,5	Handbook of Climate Change Management by Walter Leal Filho, Johannes M. Luetz&Dr.DesalegnYayehAyal published by Springer		2021



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Applicable for Unit No.	Website address
1,2,3	Climate Change 2007: Impacts, Adaptation and Vulnerability, Summary for Policymakers, IPCC. Available at: http://www.ipcc.ch/SPM13apr07.pdf
4,5	Climate Change 2007: Mitigation of Climate Change, Summary for Policymakers, IPCC. Available at: http://www.ipcc.ch/SPM040507.pdf
1,2,3	Climate Change, The Physical Science Basis, IPCC. Available at: http://ipccwgl.ucar.edu/wgl/wgl-report.html

Chaitanya S. Shinde
Chaitanya S. Shinde

A. N. Dashade
 (Dr. A. N. Dashade)
 BOS Member

~~_____~~
 (Dr. Avinash N Shrikhande,
 BOS (Gvit Engg) chairman

[Signature]
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RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR
FACULTY OF SCIENCE & TECHNOLOGY
B. TECH CIVIL ENGINEERING (CHOICE BASED CREDIT SYSTEM)

Sem: V	Total Hours Distribution per week		
Total Credit: 01	Lecture (L): 00 Hrs	Tutorial/Activity (T/A): 0 Hrs.	Practical (P): 02 Hrs.
Subject Code	BTCVE507P	Name of Subject: Industrial Training & Professional Skill Training	
Examination Scheme			
Internal Marks:	University Marks:	Minimum Passing Marks:	Examination Duration:
50 Marks	50 Marks	50 Marks	--

Course Objective	
1	The objective of the course is to give awareness of practical application of various theoretical concepts.
2	The objective of the course is to enhanced the skills by using software in the field of Civil Engineering

Course Outcome	
After completion of syllabus student able to	
1	Understand organizational skills & professional practices
2	Interpret the communication skills of organizational members with each other
3	Analyze the structural problems by using STADD.PRO
4	Design the structural members by using STADD.PRO



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MAPPING OF CO WITH PO

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BECVE507P1					3				2	2		1
BECVE507P2					3				2	2		1
BECVE507P3					3				2	2		1
BECVE507P4					3				2	2		1

1 Low

2 Medium

3 High

SYLLABUS

Part A: Industrial Training

(25 Marks Internal and 25 Marks External)

After successful completion of industrial training of 2 to 3 weeks, students have to give Industry training report including certificate of completion of industrial training.

Part B: Professional Skill Training on STADD.PRO/Any Other

(25 Marks Internal and 25 Marks External)

STAAD PRO is structural analysis and designing software which is used by civil engineers to analyse and design the structure. It helps to reduce the calculations of Shear Force, Bending Moment and deflection of structure.

1. Practical Based on: Overview of Structural Analysis and Design, Introduction of STAAD. Pro V8i, STAAD Editor, Creating a New Project in STAAD.Pro, Units, Model Generation, Creating Nodes & Members, Select Menu, Insert Node, Add Beam, Modeling Methods, Long and Short Method Practice, Modeling Practice, Working On Examples.
2. Practical Based on: Support Specification, Member Property Specification, And Material Specification. Loading, Analyzing. Understanding Units, Working on examples, Understanding Material Properties, Understanding Various Types of Loads, and Implementing Loads.
3. Practical Based on : Performing Analysis, Pre Analysis Print, Post Analysis Print, Area Load, Floor Load.
4. Practical Based on: Wind Load Generation, Load Combination & Auto Load Combinations, Repeat Load Cases, Concrete Design.




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5. Practical Based on : Concrete Column Design, Concrete Beam Design, Slab Design.

Student have to submit maximum four experiments on above contents (Selection of contents made by concern faculty) in 8 weeks.

Proposed amendment is "STAD Pro V8i or Any Other Equivalent Software may also be used for performing the same activities.

Signature
C. S. Shinde

Signature
(Dr. A.N. Dabhade)
BOS Member

~~Signature~~
(Dr. Avinash N Shrikhande,
BOS (Civil Engg) chairman



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SCHEME OF EXAMINATION & EVALUATION
B. TECH CIVIL ENGINEERING (CHOICE BASED CREDIT SYSTEM)
SEMESTER: SIXTH

Sr. No	Subject Code	Subject	Workload in Hours						Credit			Marks						Minimum passing marks	
			L	T/A	P	L	T	P	Total	Theory	Practical	Total	Theory		Practical		Theory	Practical	
													Int	Uni	Int	Uni			
1	BTCVE601T	Estimating & Costing	3	1	0	3	1	0	4	30	70	--	--	100	45	--	--		
2	BTCVE601P	Estimating & Costing (Practical)	0	0	2	0	0	1	1	--	--	25	25	50	--	--	25		
3	BTCVE602T	Construction Engineering & Management	2	1	0	2	1	0	3	30	70	--	--	100	45	--	--		
4	BTCVE603T	Water Resource Engineering	3	0	0	3	0	0	3	30	70	--	--	100	45	--	--		
5	BTCVE604T	Elective-III	3	0	0	3	0	0	3	30	70	--	--	100	45	--	--		
6	BTCVE605T	Open Elective-I	3	0	0	3	0	0	3	30	70	--	--	100	45	--	--		
7	BTCVE606P	Computer Aided Civil Engineering Drawing (Practical)	0	0	2	0	0	1	1	--	--	50	50	100	--	--	50		
TOTAL			14	2	4	14	2	2	18	150	350	75	75	650	--	--	--		

• L- Lecture, P-Practical, T- Tutorial, A- Activity (Half Credit per Hour)

Note: In summer vacation after 6th Semester, student have to complete 3 to 4 weeks industrial / Government / NGO / MSME / Rural Internship / Innovation / Entrepreneurship training. In the beginning of 7th semester, student have to submit detailed report of summer vacation training to department.

Signature
Dr. A. N. Dalhade
 P. R. O. Member

Signature
 Dr. Avinash N. Shrikhande,
 P. R. O. (Civil Engg) Chairman



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FACULTY OF SCIENCE & TECHNOLOGY

B. TECH CIVIL ENGINEERING (CHOICE BASED CREDIT SYSTEM)

Sem: VI	Total Hours Distribution per week		
Total Credit:03	Lecture (L): 03 Hrs	Tutorial/Activity (T/A): 0 Hrs.	Practical (P): Nil Hrs.
Subject Code	BECVE605T	Name of Subject: Environmental Engineering (Open Elective-I)	
Examination Scheme			
Internal Marks:	University Marks:	Minimum Passing Marks:	Examination Duration:
30 Marks (15 Marks for sessional examination) (15 Marks for Activity based)	70 Marks	45 Marks	3 Hours

Course Objective	
1	Understanding the concept and principles of environment.
2	To impart knowledge on the sources, effects and control techniques of water pollution.
3	To understand the behaviour of air pollutants and the strategies to control their presence in the ambient atmosphere.
4	To provide a comprehensive insights of the types, sources, generation, storage, collection, transport, processing and disposal of solid waste.

Course Outcome	
After completion of syllabus student able to	
1	Explore the components of biosphere and impact of human activity on environment.
2	Summarize the causes and sources of pollutants, and their impact on global environment.
3	Develop ethics and scientific awareness about waste generation and treatment.
4	Identify sources and types of wastes and its management.
5	Understand noise, noise pollution and control.




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MAPPING OF CO WITH PO

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO 1	3	1	1	1	1	2	3	1	3	1	1	1
CO 2	3	2	1	2	1	1	3	1	3	1	2	2
CO 3	2	2	1	1	1	2	2	1	2	1	1	1
CO 4	2	2	1	2	1	1	2	1	2	1	1	1
CO 5	2	1	1	2	1	1	2	1	2	1	1	1

1 Low 2 Medium 3 High

SYLLABUS

Unit No.1 Introduction to Environment												
Details of Topic	Allotment of Hours										Mapped with CO Number	
	CO1	CO2	CO3	CO4	CO5	CO6	CO7	CO8	CO9	CO10		CO11
Definition, scope and importance of environmental studies. Ecosystem, types, structure and function of ecosystem.	01											1
Energy flow in ecosystem. Biodiversity and its importance, threats to biodiversity and conservation of biodiversity. Natural resources and associated problems.	02											1
Renewable and non-renewable resources, forest resources- Description, benefits, Effects due to deforestation, Water resources –Use and conservation. Mineral resources–mining activity.	02											1
Role and responsibility of engineer in environmental protection, health and safety. Fire hazards, prevention and precautions. Industrial hazards prevention and protection.	01											1
Protection from air and noise pollution. Environment protection act Wild life protection act. Forest conservation act.	01											1
Population growth aspects and importance and effects on environment. Human health and Human rights. Concept of carbon credits.	01											1
	08											
Unit No.2 Water Pollution & Waste Water Treatment Method												
Details of Topic	Allotment of Hours										Mapped with CO Number	
	CO1	CO2	CO3	CO4	CO5	CO6	CO7	CO8	CO9	CO10		CO11
Water resources, Classification of water, Origin, composition and characteristics of domestic waste water as well as industrial waste water, Biochemical oxygen demand, Water pollution laws and standards.	02											2
Water conservation, watershed management, Rain water harvesting: Definition, methods and benefits.	02											2
Water (prevention and control of pollution) act, Waste water, Classification of waste water, Chemical oxygen demand. Basic processes of water treatment.	01											2




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Meaning of primary, secondary and tertiary treatment.	01		2
Flow chart of a simple effluent treatment plant, Theory of industrial waste treatment, Volume reduction, neutralization and precipitation methods.	01		2
	07		
Unit No.3 Air Pollution			
Details of Topic	Allotment of Hours		Mapped with CO Number
	L	T/A	CO
Standard definition of air pollution, Composition of natural air, Names of air pollutants, Classification of air pollutants, primary and secondary pollutants.	02		3
Classification of source of air pollutants on different bases, Definition of different types of aerosols.	01		3
Effect of air pollution on: human health, material properties, vegetation. Major toxic metals and their effects. Air (prevention and control of pollution) act.	01		3
Major environmental phenomenon e.g., acid rain, global warming, greenhouse effect, ozone layer depletion.	01		3
Air quality standards, Brief description of air pollution laws. Meteorological parameters influencing air pollution Environmental lapse rate, temperature inversion.	01		3
Role of national green tribunal in India, Function of Regulatory boards like CPCB and State Pollution Control Boards	01		3
	07		
Unit No.4 Energy Environment Climate Change			
Details of Topic	Allotment of Hours		Mapped with CO Number
	L	T/A	CO
An overview of Bureau of Energy Efficiency (bee), The National Action Plan on Climate Change (NAPCC),	02		4
Schemes under The National Mission for Enhanced Energy Efficiency (NMEEE),	02		4
Energy Conservation Building Code (ECBC),	01		4
Bio diversity and its conservation, Sustainable development, Kyoto Protocol,	01		4
Conference of Parties (Cop), Clean Development Mechanism (CDM).	01		4
	07		
Unit No.5 Solid Waste Management & Noise Pollution			
Details of Topic	Allotment of Hours		Mapped with CO Number
	L	T/A	CO
Sources and classification of solid waste, Public health aspects, Disposal methods – open dumping, sanitary, land fill, Incineration, composting.	02		5
Potential methods of disposal, Recovery and recycling of paper, glass, metal and plastic Sources of noise pollution.	02		5



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Units of Noise pollution measurement, Allowable limits for different areas.	01	5
Problems of noise pollution and measures to control it, Noise pollution control devices brief discussion	02	5
	07	

References							
Applicable for Unit No.	Name of Book	Name of Author	Name of Publisher	Edition	Category		
					Text Book	Research paper	Reference Book
1	Environmental Engineering	Peavy and Rowe	McGraw Hill India.	2013			
2	Noise Control: Principles and Practices	Bruel & Kjaer,	. B & K Pub., Denmark	2nd ed			
3	Wastewater Engineering: Treatment and Reuse		Metcalf and Eddy	4th ed			
4	Environmental pollution control Engineering	C.S. Rao					
5	Industrial waste and its treatment	Seth					

*Standards
Center for Research*

*Approver
(Dr. A.N. Dakhode)
BOS Member*

*(Dr. Avinash N. Shrikhande,
BOS (Cult. Engrg.) Chairman*

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1.3.1 Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum.

List of Events organized under Gender, Human Values, Environment and Sustainability and Professional Ethics in the Academic year 2021-2022.

Name of the activity	Organizing unit/ agency/ collaborating agency	Name of the scheme	Events related to Cross cutting issues	Date of the activity	Number of students participated
"Cleanness Drive"	NSS	NSS/Awareness Program	Environment & Sustainability	4/10/2021	32
"Joy of Giving"	NSS & Women Development Cell 'ABHAYA'	NSS/social Responsibility	Human Values	24/1/2022	13
"Chhatrapati Shivaji Maharaj Jayanti Celebration"	NSS	NSS/social Responsibility	Human Values	19/2/2022	56
"I RESPECT WOMEN BECAUSE..."	NSS & Women Development Cell 'ABHAYA'	NSS/social Responsibility	Human Values & Gender	26/2/2022	70
"HEALTH AND HYGEINE"	NSS & Women Development Cell 'ABHAYA'	NSS/social Responsibility	Gender	8/03/2022	23



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Sarvasiddhanta Education Society's

Swaminarayan Siddhanta Institute of Technology, Nagpur

Affiliated to Rashtrasant Tukadoji Maharaj Nagpur University

Nagpur-Katol Highway Road, Khapri (Kothe),

Tal: Kalmeshwar, Nagpur, Maharastra-441501



"International Yoga Day"	NSS & Women Development Cell 'ABHAYA'	NSS/social Responsibility	Human Values	22/6/2022	42
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PRINCIPAL




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Ref. No.: SSIT/NSS/ACT/2021/01

Date: 29/09/2021

NOTICE

All the students are hereby informed that, a 'Cleanness Drive' is going to be organized at college campus on 04/10/2021. All the students are encouraged to participate in the event.

Spewle
Incharge

NSS

Spewle
Principal
Swaminarayan Siddhanta Institute
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Copy to:

1. Principal
2. HOD (CE/Civil/ETC/ME)
3. All concerned person
4. Notice Board



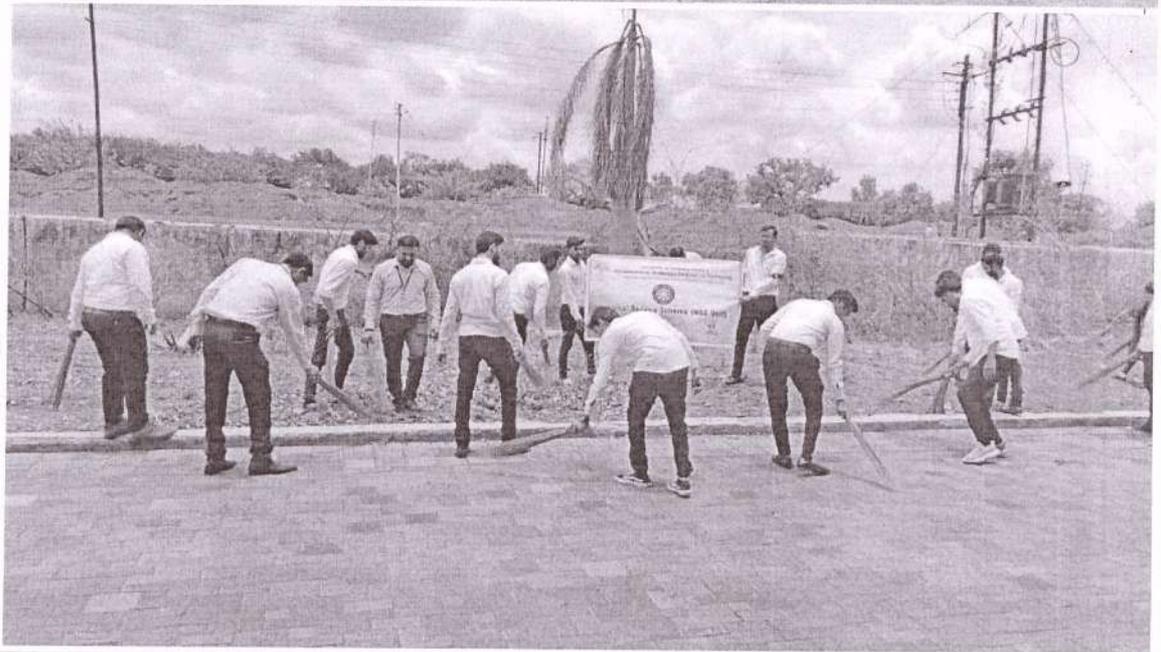
**Activity report
 on
 "Cleanness Drive"**

Title	"Cleanness Drive"
Date & Timing	04/10/2021 & 10.30 AM- 01.30 PM
Organizer	NSS unit
Venue	SSIT College Campus
Objective	To spread awareness about the cleanness, hygiene and its Important over health.
Summary/ Report of the Program	A cleanliness drive was organized by the NSS unit on 04 October 2021. The objective of this event was to inculcate the idea and values of "Swachh Bharat Abhiyan" in the mindset of the students, so that they would maintain cleanliness not only in the college premise but also around their home and neighbourhood. The volunteers of NSS unit took efforts for this event.
Photograph	

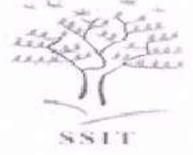



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Tal: Kalmeshwar, Nagpur, Maharastra-441501

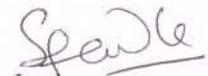


[Signature]
Principal
Swaminarayan Siddhanta Institute
of Technology, Kalmeshwar,
Dist. Nagpur-441501



List of NSS unit Volunteers

Sr. No	Name of Student	Present
1.	SHRIRAO MANGESH PRABHAKAR	P
2.	NARANJE ASHWAJIT DADARAO	P
3.	VAISHNAVI SUDHAKAR SAKINALA	P
4.	NAVGHARE CHANCHAL KOMAL	P
5.	PATIL DIKSHA GAUTAMRAO	P
6.	KUSHWAHA ANKIT SADANAND	P
7.	KAMBALE NITESH DEWAJI	P
8.	KHADASE HARSHAL GAJENDRA	P
9.	GAJBHIYE SHASHANK JAWAHAR	P
10.	NIKITA GURUPAD ADHIKARI	P
11.	ABDUL KALEEM ABDUR RAHEEM	P
12.	AMOL GANPAT GHANODE	P
13.	DIPESH RAMESH ROY	P
14.	DURGESH LOKCHAND GAUTAM	P
15.	FAISAL MALIK MOHAMMAD SHAFEEQUE	P
16.	HARSHAD DILIPRAO DHOLE	P
17.	HARSHAD KRUSHNA SHENDE	P
18.	HARSHAL ASHOKRAO ATHBATLE	P
19.	JAYANTO MANINDRA MISTRY	P
20.	ABHAY SURESH PATLE	P
21.	ABHISHEK SUDHAKAR TAGADE	P
22.	AKASH ARUN ZADE	P
23.	ANKIT TULARAM JIBHAKATE	P
24.	DHANANJAY KJEMCHAND GOKHALE	P
25.	DIVYANI RASHTRAPAL MESHRAM	P
26.	GANESH ASHOK MESHRAM	P
27.	JAYSHRI VILASH PARWATE	P
28.	KANCHAN DEVRAJ GOUPALE	P
29.	KAPIL PRAKASH RATHOD	P
30.	ABHAY SURESH PATLE	P
31.	VIVEK CHINTAMAN WAGHADE	P
32.	YOGITA VIJAY BHANDARKAR	P


Incharge




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Ref. No.: SSIT/NSS/ACT/2022/02

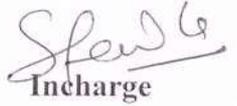
Date: 21/01/2022

NOTICE

All the students, teaching and non-teaching staff are hereby informed that, on the occasion of National Girl Child Day, National Service Scheme (NSS) & "ABHAYA" Women Cell of college is organizing a Drawing Competition for the Girl students of Tribal Ashram School, Khapri, Kalmeshwar on 24th January 2022 at college campus.


Incharge

Women Cell, SSIT


Incharge

NSS, SSIT

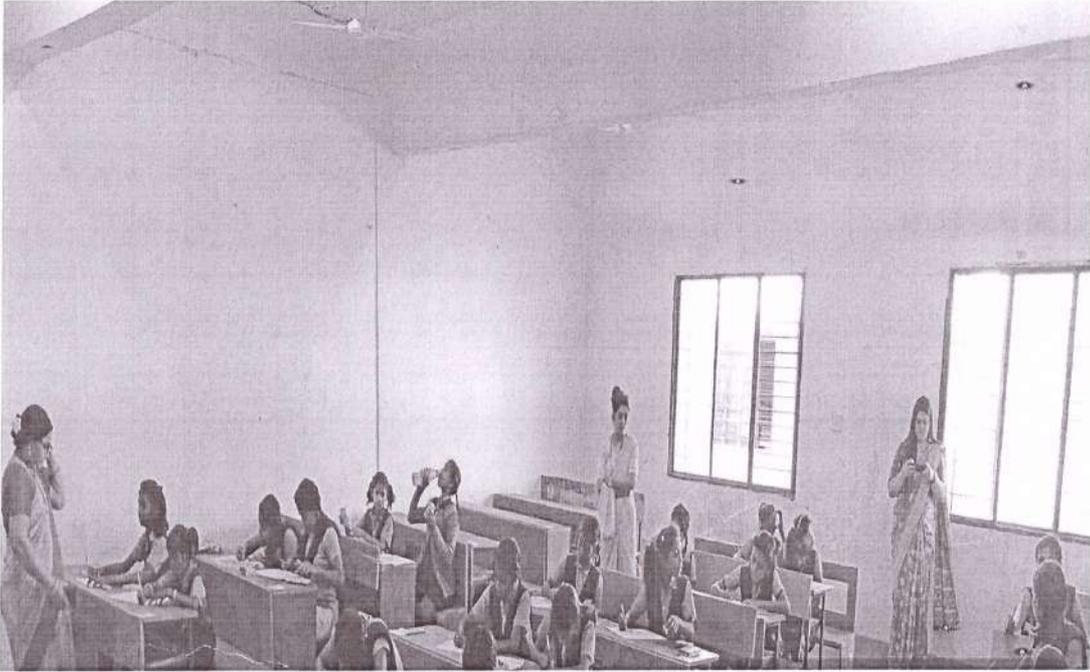
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4. Notice Board



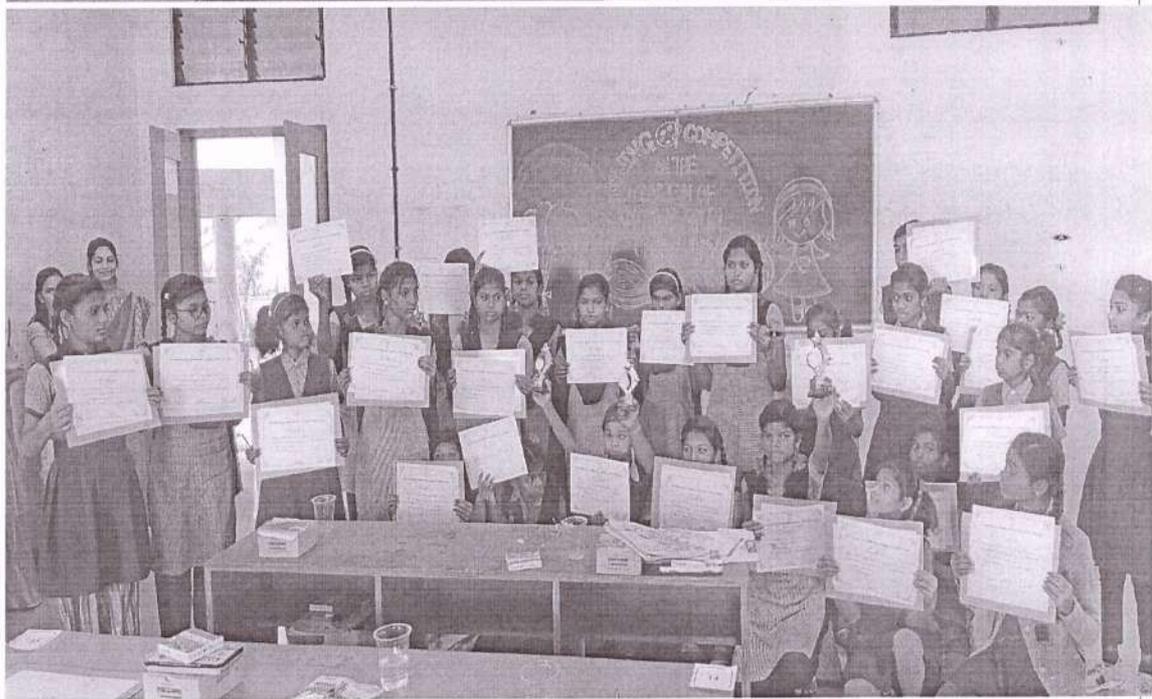
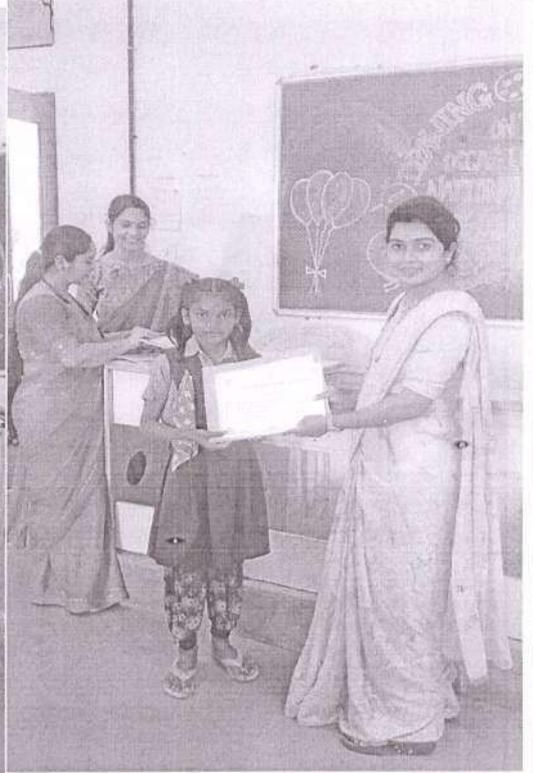
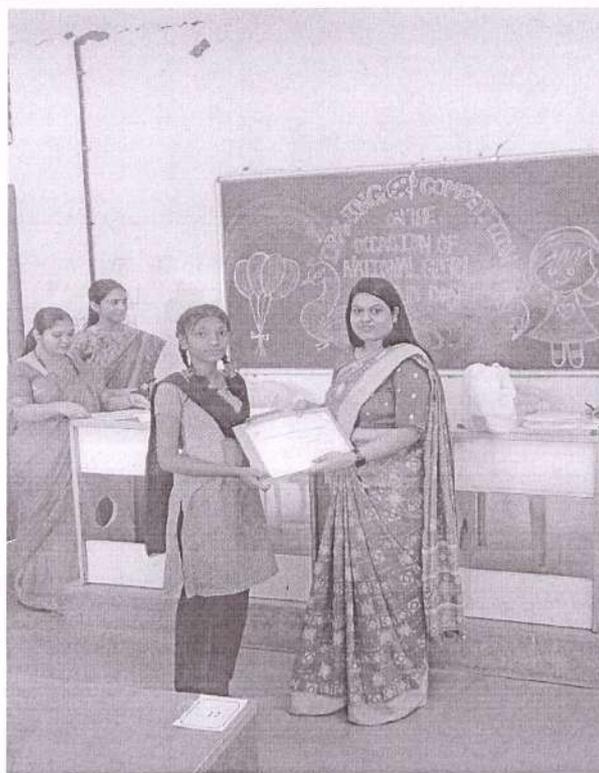

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Activity report
On
“National Girl Child Day”

Title	“National Girl Child Day”
Date & Timing	24-01-2022 & 10.30 AM- 01.30 PM
Organizer	NSS unit & Women Development Cell “ABHAYA”
Venue	SSIT, Nagpur
Objective	To encourage the rural tribal school students to exhibit their ideas and creativity through drawing competition.
Summary/ Report of the Program	On the occasion of National Girl Child Day, NSS & “ABHAYA” Women development cell, has organized a drawing competition on 24 th January 2022, at college campus premise.50 students from the Tribal Ashram School were participated in the event. A drawing competition was organised to celebrate the occasion. Students were participated in the event with enthusiasm. The main objective of this programme was to explore the ideas and creativity of the tribal Girl students and also to motivate them to do well in study. After the event prizes and certificates were distributed to the students and gifts were distributed to each and every student.
Photograph	




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Dist. Nagpur-441501



List of NSS unit Volunteers

Sr. No	Name of Student	Present
1.	RAHUL NAMDEO BORKAR	P
2.	RANJEET UTTAMRAO YESANKAR	P
3.	ROHIT SHARD PIMPALKAR	P
4.	SONALI VINOD BELE	P
5.	SWATI HEMRAJ DONGARE	P
6.	TRUPTI BHAURAO THAKARE	P
7.	VISHAKHA SANJAY GOHANE	P
8.	NIDHI RAMNARESH SHARMA	P
9.	SONALI VINOD BELE	P
10.	SWATI HEMRAJ DONGARE	P
11.	KARTIK SADANAND GAURKAR	P
12.	MD AMIN MD PARVEZ UMAR SHEIKH	P
13.	MERAJ ALI SADDIQUE MIYAN ALI	P

Sfawle
Incharge



Sfawle
Principal
Swaminarayan Siddhanta Institute
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Ref. No. SSIT/NSS/ACT/2022/03

Date: 16/02/2022

NOTICE

All the students and staff and are hereby informed that a program on 'Chhatrapati Shivaji Maharaj Jayanti' is going to be organized on 19th February 2022 at 12.00 pm in the Seminar Hall. All are requested to remain present in the program.

S. S. S.
Incharge

Copy to:

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3. All concerned person
4. Notice Board



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Principal
Swaminarayan Siddhanta Institute
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Activity report
On
“Chhatrapati Shivaji Maharaj Jayanti Celebration”

Title	“Chhatrapati Shivaji Maharaj Jayanti Celebration”
Date & Timing	19/02/2022 & 10.30 AM- 03.30 PM
Organizer	NSS unit
Venue	SSIT, Nagpur
Objective	To create literate students about how to achieve worrier mindset to tackle any situation.
Summary/ Report of the Program	<p>On 19 February 2022, “Shivaji Jayanti” was celebrated in the college campus. After the inauguration of the program, a play was performed by the students. The play was based on the life of Chhatrapati Shivaji Maharaj. Abhit Mishra, a student of final year engineering talked some important facts about Shivaji Maharaj. The main objective of this program was to make student aware about rich cultural heritage of our country and the bravery of Chhatrapati Shivaji Maharaj.</p>




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Dist. Nagpur-441501



List of NSS unit Volunteers

Sr. No	Name of Student	Present
1.	BHALAVI KOMAL RAVI	P
2.	BOGA SANGITA SHRIRAM	P
3.	DHAWRE SIMABAI VINOD	P
4.	DHURVE BHARAT NAVNATH	P
5.	GOTA SUMAN GANDORAM	P
6.	HALAMI USHA VISHWANATH	P
7.	MARKAM UMED RAMSING	P
8.	MASRAM RITESH RAMESHWAR	P
9.	NIMJE PRIYANSHU NARENDRA	P
10.	PANDHARE SUNIL JAISING	P
11.	PARTETI AKASH VASANT	P
12.	MAYURI DNYANESHWAR BHWANKAR	P
13.	MOHAMMAD SUFIYAN MOHAMMAD SHABBIR	P
14.	MOHAN KRUSHNARAO BIJAWE	P
15.	MOHD OWAIS RAZA GHULAM MOHIUDDIN	P
16.	MOHD WAHID AB SAYEED	P
17.	MUKESH GOVARDHAN KATEWAR	P
18.	NAVJEEVAN KASANDAS CHAVHAN	P
19.	NIKHIL CHANDRAKANT BHOSALE	P
20.	NIKHIL NAMDEO KUTHE	P
21.	NISHA VIJAY PAKMODE	P
22.	OMKAR GAJANANRAO KSHIRSAGAR	P
23.	SIDDHI ALKESH PANDEY	P
24.	SHUBHAM VIJAYRAO TANDULKAR	P
25.	SNAHA SURESH LANGDE	P
26.	K NANDINI RAO	P
27.	TALMALE SHANTANU HARIBHAU	P
28.	MESHRAM PAYAL NAROTTAM	P
29.	DHABEKAR YASH SANJAY	P
30.	TARAFDAR KUNDAN KINGKAR	P
31.	NANDURKAR APEKSHA SANJAY	P
32.	MOHD MOIN IMRAN AHMAD	P
33.	BAWANKULE DEEPAK CHAITRAM	P
34.	BACHHAV SAI SHRIDHAR	P
35.	MARASKOLHE MAYURI KAWDUJI	P



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36.	HAJARE ACHAL NILKANTHA	P
37.	TAYADE SURAJ RAJESH	P
38.	SHRIRAO MANGESH PRABHAKAR	P
39.	NARANJE ASHWAJIT DADARAO	P
40.	VAISHNAVI SUDHAKAR SAKINALA	P
41.	NAVGHARE CHANCHAL KOMAL	P
42.	PATIL DIKSHA GAUTAMRAO	P
43.	KUSHWAHA ANKIT SADANAND	P
44.	KAMBALE NITESH DEWAJI	P
45.	KHADASE HARSHAL GAJENDRA	P
46.	GAJBHIYE SHASHANK JAWAHAR	P
47.	NIKITA GURUPAD ADHIKARI	P
48.	ABDUL KALEEM ABDUR RAHEEM	P
49.	AMOL GANPAT GHANODE	P
50.	DIPESH RAMESH ROY	P
51.	DURGESH LOKCHAND GAUTAM	P
52.	FAISAL MALIK MOHAMMAD SHAFEEQUE	P
53.	HARSHAD DILIPRAO DHOLE	P
54.	HARSHAD KRUSHNA SHENDE	P
55.	HARSHAL ASHOKRAO ATHBATLE	P
56.	JAYANTO MANINDRA MISTRY	P

Spawle
Incharge



Spawle
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Ref. No.: SSIT/NSS/ACT/2022/04

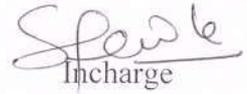
Date: 21/02/2022

NOTICE

All the students, teaching and non-teaching staff are hereby informed that our college is organizing an event "I RESPECT WOMEN BECAUSE..." under National Service Scheme (NSS) in collaboration with "ABHAYA" Women development Cell on 26th of February 2022 in college campus at 1.30 pm.


Incharge

Women Cell, SSIT


Incharge

NSS, SSIT

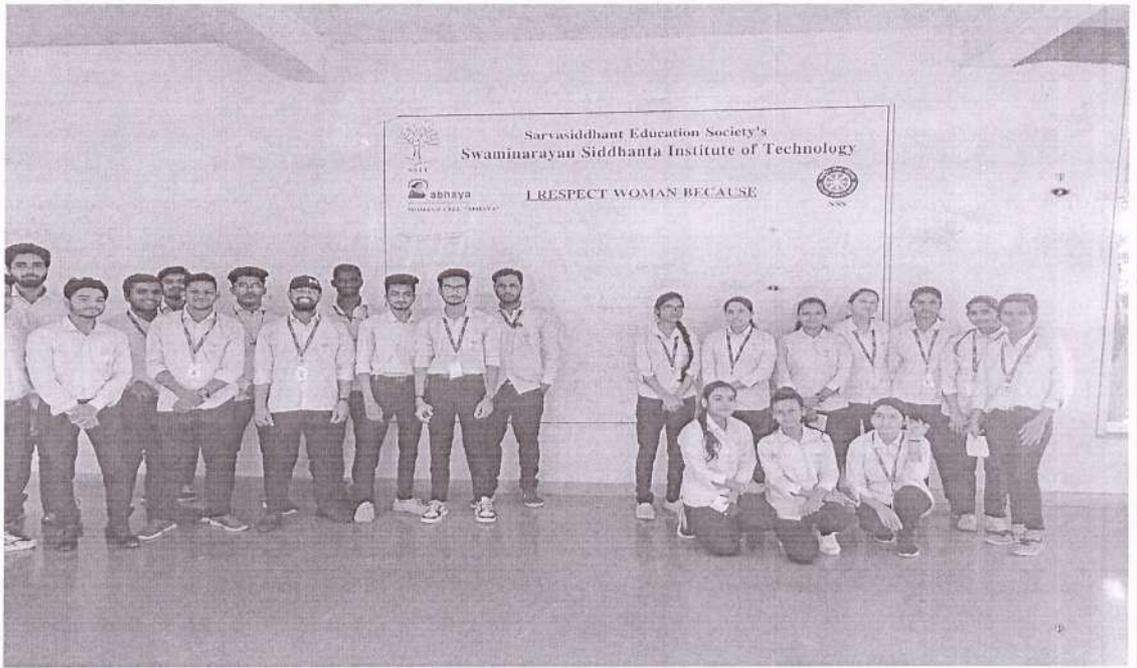
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3. All concerned person
4. Notice Board



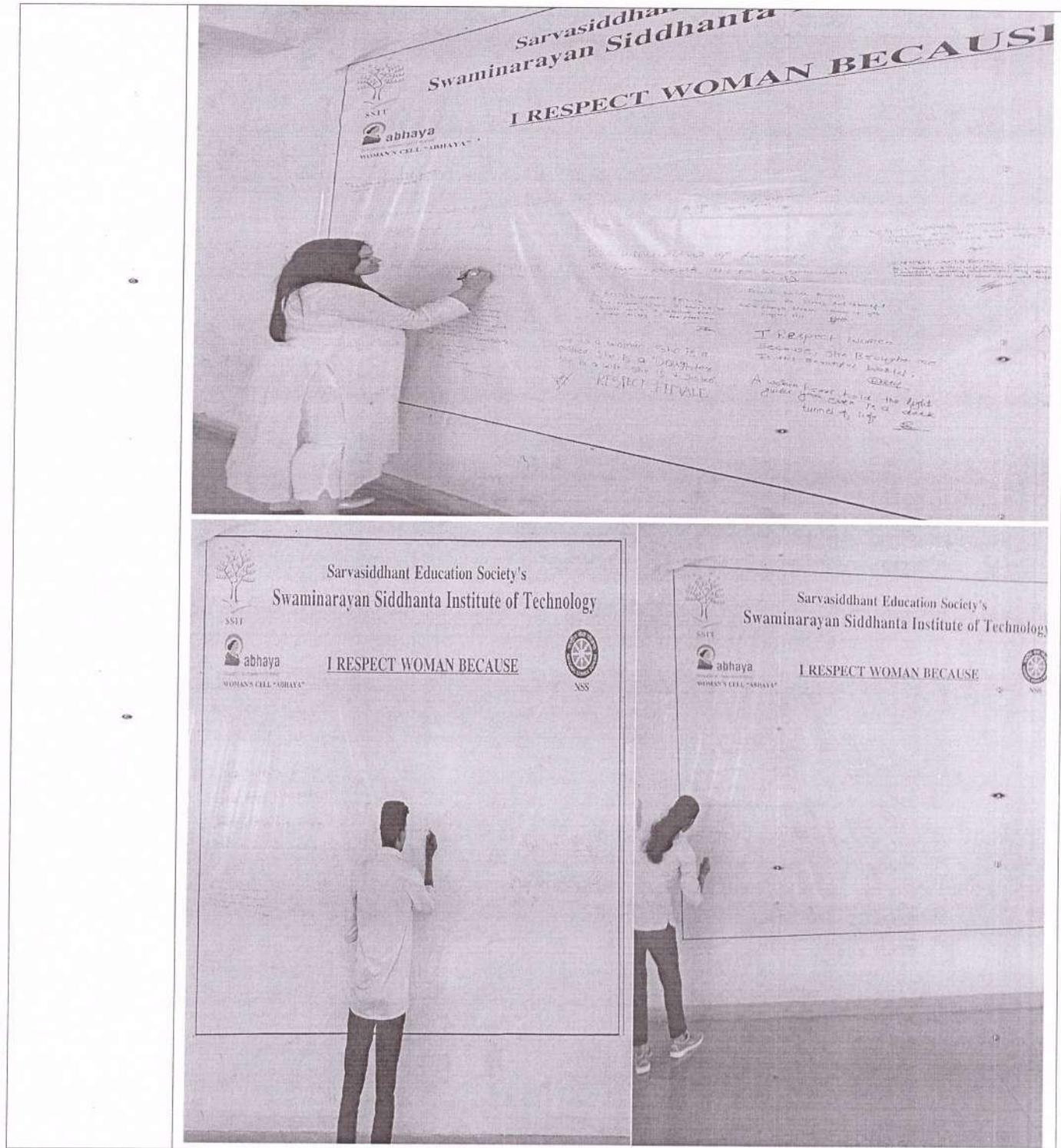

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Activity report
On
“I Respect Women because...”

Title	“I Respect Women because...”
Date & Timing	26-02-2022 & 01.30 PM to 4.30 PM
Organizer	NSS unit & Women Development Cell “ABHAYA”
Venue	SSIT, Nagpur
Objective	To uphold women’s achievement, recognizing challenges and underline their importance.
Summary/ Report of the Program	On 26 th February 2022, NSS unit, NCET, Nagpur organized an event on “I Respect Women because...” a slogan campaign for students and staff. The main objective of the program was to spread message among the students about gender equality. Event was organized in college campus at administrative lobby and students were participated in the event with full of energy and enthusiasm.
Photograph	



(Signature)
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 Dist. Nagpur-441501



[Signature]
Principal
Swaminarayan Siddhanta Institute
of Technology, Kalmeshwar,
Dist. Nagpur-441501



List of NSS unit Volunteers

Sr. No	Name of Student	Present
1.	NEERAJ VINOD GUHE	P
2.	PRASHANT SHAMRAO ZODE	P
3.	SAURABH GAJANAN SHIRBHATE	P
4.	SAYED MOBIN SAYED AZIM SAYED	P
5.	SWAPNIL MOHANRAO CHAUDHARI	P
6.	TUFANO NAREN CHANDRA MAHTO	P
7.	VIKSH RANJAN ARUN SHARMA	P
8.	ASHISH BRAMHADAS NAGDEOTE	P
9.	MD JUNAID RAJA GULAM MOHADDIN KHAN	P
10.	SHRIKANT SHANKARRAO TATODE	P
11.	SHUBHAM SHRAVAN BHALAVI	P
12.	SWAPNIL SURESH WANJARI	P
13.	ABHAY SURESH PATLE	P
14.	ABHISHEK SUDHAKAR TAGADE	P
15.	AKASH ARUN ZADE	P
16.	ANKIT TULARAM JIBHAKATE	P
17.	DHANANJAY KJEMCHAND GOKHALE	P
18.	DIVYANI RASHTRAPAL MESHRAM	P
19.	GANESH ASHOK MESHRAM	P
20.	JAYSHRI VILASH PARWATE	P
21.	KANCHAN DEVRAJ GOUPALE	P
22.	KAPIL PRAKASH RATHOD	P
23.	KAUSHIK KRITIBHUSHAN GATIDAR	P
24.	KETAN DILIP YANASKAR	P
25.	KIRTIKUMAR RAMLAL RANE	P
26.	KRUSHNA DHARMAJI KUMARE	P
27.	MANSI PRASHANT DENGE	P
28.	MAYUR HEMRAJ PANHARAM	P
29.	MD SAAD MD RIYAZ	P
30.	MD SHOAIB FAROOQUE	P
31.	MONIKA SHRIRANG CHOUDHARI	P
32.	NARESHKUMAR KHEMRAJ GAIDHANE	P
33.	PRASHIK RAMESH DHAWANE	P
34.	RATHIN DEEPAK BISWAS	P
35.	RITIK SUBHAS GUPTA	P
36.	ROHIT ISHWERSINGH TAK	P
37.	BAWANKULE DEEPAK CHAITRAM	P



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38.	BACHHAV SAI SHRIDHAR	P
39.	MARASKOLHE MAYURI KAWDUJI	P
40.	HAJARE ACHAL NILKANTHA	P
41.	TAYADE SURAJ RAJESH	P
42.	SHRIRAO MANGESH PRABHAKAR	P
43.	NARANJE ASHWAJIT DADARAO	P
44.	VAISHNAVI SUDHAKAR SAKINALA	P
45.	NAVGHARE CHANCHAL KOMAL	P
46.	SWEETY BHAGWAN MESHARAM	P
47.	AJAY BALRAM NAGESHWAR	P
48.	AJAY VASANTRAO VITALKAR	P
49.	AKASH GULAB CHARDE	P
50.	AKSHAY GANESH KHOKLE	P
51.	ANKIT CHANDRAKANT KHADSE	P
52.	ASHISH WAMAN KHADILKAR	P
53.	ATIF ABDUL ZAHEER	P
54.	HARISH KUMAR GOBARDHAN LILHARE	P
55.	KANTA BISUN SAHU	P
56.	KARTIK SADANAND GAURKAR	P
57.	MD AMIN MD PARVEZ UMAR SHEIKH	P
58.	MERAJ ALI SADDIQUE MIYAN ALI	P
59.	MRUNAL ARJUN KELKAR	P
60.	NAVIN RAVI GAIKAWAD	P
61.	NIKHIL KSHIRASAGAR RAMTEKE	P
62.	PRASHANT GOVIDRAO JOSHI	P
63.	RAHUL NAMDEO BORKAR	P
64.	RANJEET UTTAMRAO YESANKAR	P
65.	ROHIT SHARD PIMPALKAR	P
66.	SAURAV PRABHAKAR PONIKAR	P
67.	SHAHARUKALLI UMMDALLI SAIYYAD	P
68.	SHARAFRAJ KHAN AHSANUL HAKUE KHAN	P
69.	SHIVAJEE SINGH SHRIRAM SINGH	P
70.	SWEETY BHAGWAN MESHARAM	P

S. S. S.
 Incharge



S. S. S.
Principal
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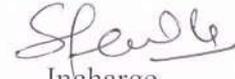
Ref. No.: SSIT/NSS/ACT/2022/05

Date: 04/03/2022

NOTICE

All the women faculties & girls students are hereby informed that, on the occasion of International Women's Day, National Service Scheme (NSS) & Women development cell "ABHAYA" going to organize a program on "HEALTH AND HYGEINE" at conference hall on 8th march 2022.


Incharge,
Women cell


Incharge
NSS

Copy to:

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3. All concerned person
4. Notice Board




Principal
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Activity report
On
“HEALTH AND HYGEINE”

Title	“HEALTH AND HYGEINE”
Date & Timing	08-03-2022 & 01.30 PM- 03.30 PM
Organizer	NSS unit and Women Development Cell “ABHAYA”
Resource Person	Ms. Priyanka Bhondwe, Nutritionist & Dietician at Maxcare Hospital, Nagpur.
Venue	SSIT, Nagpur
Objective	To create awareness to adopt health and hygiene practices by Girls and Women.
Summary/ Report of the Program	On 8 th March 2022, on the occasion of International Women’s Day, the NSS unit of SSIT, in association of Women development cell “ABHAYA” had organized the “HEALTH AND HYGEINE” program in the College campus. The objective of this programme was to create awareness about health and hygiene practices by Girls and Women. Ms. Priyanka Bhondwe, Nutritionist & Dietician at Maxcare Hospital, Nagpur was present in the event and gave some useful physical fitness tips to the students and faculties as well. In this occasion a yoga session was also organized.
Photograph	



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List of NSS unit Volunteers

Sr. No	Name of Student	Present
1.	SUPRIYA DAMODAR NIKULE	P
2.	DIVYANI RASHTRAPAL MESHRAM	P
3.	JAYSHRI VILASH PARWATE	P
4.	KANCHAN DEVRAJ GOUPALE	P
5.	MONIKA SHRIRANG CHOUDHARI	P
6.	SONALI VINOD BELE	P
7.	SWATI HEMRAJ DONGARE	P
8.	TRUPTI BHURAO THAKARE	P
9.	VISHAKHA SANJAY GOHANE	P
10.	NIDHI RAMNARESH SHARMA	P
11.	PRITI VIJAY TAYADE	P
12.	SHUBHANGI DEVKUMAR SAKHARE	P
13.	SWEETY BHAGWAN MESHRAM	P
14.	KANTA BISUN SAHU	P
15.	ANJALI DILIP UKEY	P
16.	DARSHANA BHASHKAR DAUTPURE	P
17.	KARISHMA ASHOKRAO KOHALE	P
18.	MAYURI DNYANESHWAR BHWANKAR	P
19.	KOMAL SANTOSH INGLE	P
20.	SMRUTI KISAN TURANKAR	P
21.	SONAL BHOJRAJ LANJE	P
22.	SUPRIYA DAMODAR NIKULE	P
23.	YOGITA VIJAY BHANDARKAR	P

Spawle
Incharge



Principal
Principal
Swaminarayan Siddhanta Institute
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Ref. No. SSIT/NSS/ACT/2022/06

Date: 17/06/2022

NOTICE

All the students are informed that, National Service Scheme (NSS) is organizing the YOGA session to celebrate "International Yoga Day" at college campus on 22/06/2022. All the staff and students are invited to participate in the event.

S. Pawar
Incharge,
NSS, SSIT

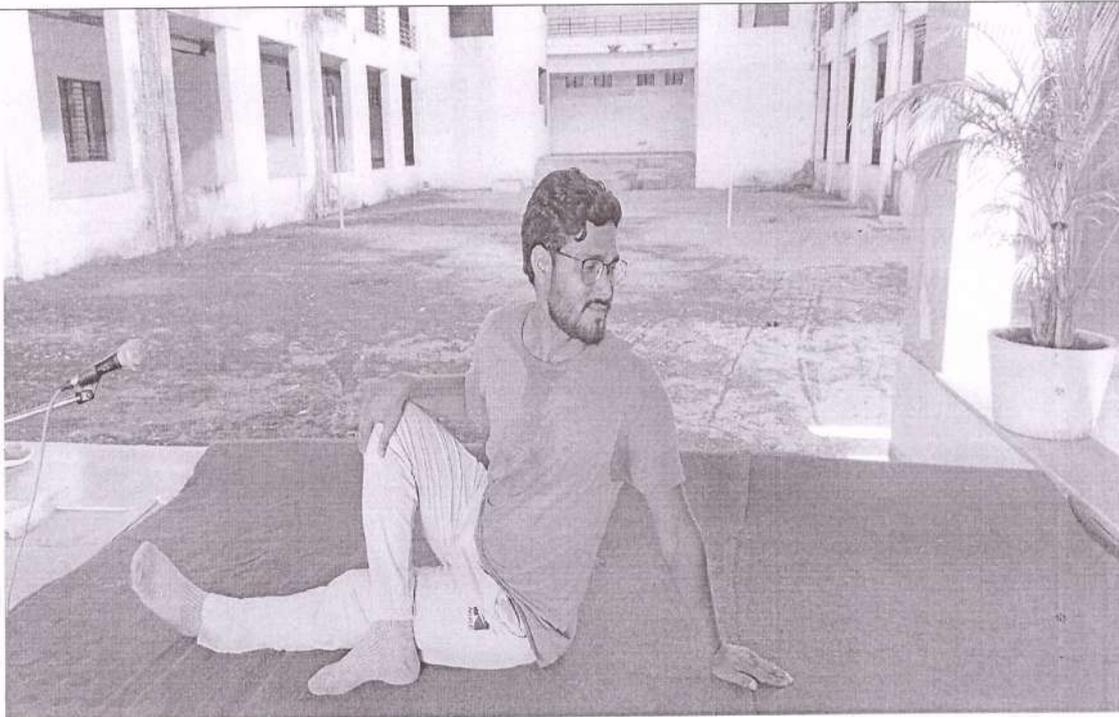
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S. Pawar
Principal
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Dist. Nagpur-441501

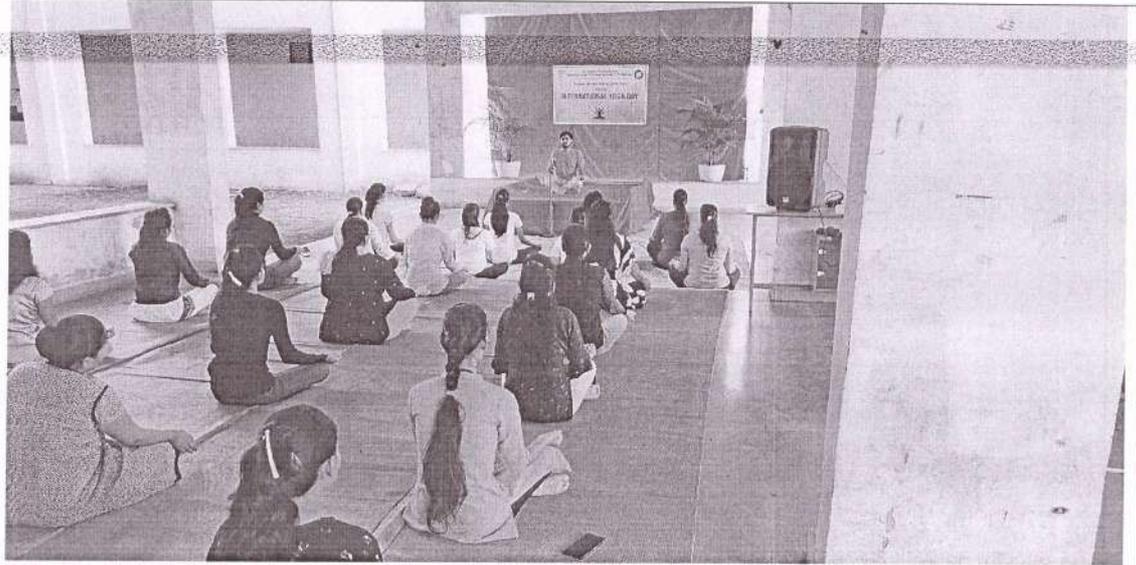
Activity report
On
"International Yoga Day"

Title	"International Yoga Day"
Date & Timing	22/06/2022 & 10.30AM- 12.30 PM
Organizer	NSS unit and Women Development Cell "ABHAYA"
Venue	SSIT Campus
Objective	To spread awareness among the students to remain physically fit through Yoga.
Summary/ Report of the Program	On 22/06/2022, the National Service Scheme (NSS) organized the YOGA Session on the occasion of "International Yoga Day" at college campus. The objective of the event was to spread awareness among the students about the importance of Yoga in order to remain physically fit and healthy. The volunteers of NSS unit took efforts to make session successful. Staff and students were participated in the event with full of joy and enthusiasm.
Photos	




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Tal: Kalmeshwar, Nagpur, Maharashtra-441501



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Dist. Nagpur-441501



List of NSS unit Volunteers

Sr. No	Name of Student	Present
1.	ROKDE SWETA MURLIDHAR	P
2.	KOMAL BABA MESHAM	P
3.	SACHIN PANDURANG BHOORE	P
4.	SHUBHAM DEEPAK PANDHRAM	P
5.	PRASAD ANIL DONGARE	P
6.	SHITAL ANANDRAO MARASKHOLE	P
7.	SIDDHI ALKESH PANDEY	P
8.	SHUBHAM VIJAYRAO TANDULKAR	P
9.	SNAHA SURESH LANGDE	P
10.	K NANDINI RAO	P
11.	TALMALE SHANTANU HARIBHAU	P
12.	MESHAM PAYAL NAROTTAM	P
13.	DHABEKAR YASH SANJAY	P
14.	TARAFDAR KUNDAN KINGKAR	P
15.	NANDURKAR APEKSHA SANJAY	P
16.	MOHD MOIN IMRAN AHMAD	P
17.	BAWANKULE DEEPAK CHAITRAM	P
18.	BACHHAV SAI SHRIDHAR	P
19.	MARASKOLHE MAYURI KAWDUJI	P
20.	HAJARE ACHAL NILKANTHA	P
21.	TAYADE SURAJ RAJESH	P
22.	SHRIRAO MANGESH PRABHAKAR	P
23.	NARANJE ASHWAJIT DADARAO	P
24.	VAISHNAVI SUDHAKAR SAKINALA	P
25.	TEKAM SHALU TEJRAM	P
26.	NAVGHARE CHANCHAL KOMAL	P
27.	PATIL DIKSHA GAUTAMRAO	P
28.	KUSHWAHA ANKIT SADANAND	P
29.	KAMBALE NITESH DEWAJI	P
30.	KHADASE HARSHAL GAJENDRA	P
31.	GAJBHIYE SHASHANK JAWAHAR	P
32.	NIKITA GURUPAD ADHIKARI	P
33.	ABDUL KALEEM ABDUR RAHEEM	P
34.	AMOL GANPAT GHANODE	P
35.	DIPESH RAMESH ROY	P
36.	DURGESH LOKCHAND GAUTAM	P
37.	FAISAL MALIK MOHAMMAD SHAFEEQUE	P
38.	HARSHAD DILIPRAO DHOLE	P



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39.	HARSHAD KRUSHNA SHENDE	P
40.	HARSHAL ASHOKRAO ATHBATLE	P
41.	JAYANTO MANINDRA MISTRY	P
42.	KUSHAL SHRIKRUSHNARAO ACHAKAR	P

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